ADDITIONAL

Service Manual

PIONEER

ORDER NO.
ARP-490-0

STEREO CASSETTE TAPE DECK

CT-1050W

MODEL CT-1050W COMES IN SIX VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	AC120V only	U.S.A. model
KC	AC120V only	Canada model
HEM	AC220V, 240V (switchable)	European continent model
HB	AC220V, 240V (switchable)	United Kingdom model
S	AC110V, 120V, 220V, 240V (switchable)	General export model
YP	AC240V only	Australia model

- CT-1050W is the same as the CT-055W except for the design (color) only.
- This additional service manual is applicable to the CT-1050W/KU, HEM, HB, YP and S types.
- As to the KC type, please refer to the additional service manual (ARP-628-0).
- For servicing these types, please refer to the CT-055W service manual (ARP-489) with the exception of this additional service manual.

MC-Service

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• Contrast of Miscellaneous Parts

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
  560Ω 56 x 10^1 561 ..... RD¼PS 5 6 1 J
  47kΩ 47 x 10^3 473 ..... RD¼PS 4 7 3 J
  0.5Ω 0R5 ..... RN2H 0 R 5 K
  1Ω 010 ..... RS1P 0 1 0 K
  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
  5.62kΩ 562 x 10^1 5621 ..... RN¼SR 5 6 2 1 F
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Mark	Symbol & Description	Part No.					
		CT-055W KU type	CT-1050W KU type	CT-1050W HEM type	CT-1050W HB type	CT-1050W YP type	CT-1050W S type
	Power Supply assembly	GWR-206	GWR-206	GWR-208	GWR-208	GWR-208	GWR-208
⚠ ★	T1 Power transformer (120V)	ATS-122	ATS-122	.....	.....	.....	.....
⚠ ★	(220V/240V)	.....	.....	ATS-124	ATS-124	ATS-124	.....
⚠ ★	(110V/120V/220V/240V)	.....	.....	.....	.....	.....	ATS-123
⚠ ★★	S1 Line voltage selector	.....	.....	.....	.....	.....	AKX-502
⚠ ★★	FU1 Fuse	AEK-122	AEK-122	AEK-017	AEK-017	AEK-017	AEK-122
	Front panel assembly	ANM-649	ANM-680	ANM-680	ANM-680	ANM-680	ANM-680
	Rotary knob	AAB-372	AAB-383	AAB-383	AAB-383	AAB-383	AAB-383
	Power knob assembly	AAD-836	AAD-901	AAD-901	AAD-901	AAD-901	AAD-901
	Push knob	AAD-894	AAD-899	AAD-899	AAD-899	AAD-899	AAD-899
	Push knob	.....	AAD-900	AAD-900	AAD-900	AAD-900	AAD-900
	Bonnet case	ANE-489	ANE-499	ANE-499	ANE-499	ANE-499	ANE-499
	Door panel A	ANR-842	ANR-868	ANR-868	ANR-868	ANR-868	ANR-868
	Door panel B	ANR-843	ANR-869	ANR-869	ANR-869	ANR-869	ANR-869
	Cushion	.....	AEA-055	AEA-055	AEA-055	AEA-055	AEA-055
⚠	Strain relief	AEC-327	AEC-327	AEC-882	AEC-882	AEC-882	AEC-327
⚠	Power cord	ADG-052	ADG-052	ADG-041	ADG-079	ADG-043	ADG-046
	Screw	.....	.....	.....	.....	.....	VTZ30P100FZK
	Packing case	AHE-348	AHE-370	AHE-405	AHE-405	AHE-405	AHE-405
	Operating instractions(English)	ARB-610	ARB-610	.....	ARB-610	ARB-610	ARB-610
	(English/German/French/ Italian)	.....	.....	ARE-109	.....	.....	.....

• Electrical Part List of Power Supply Assembly (GWR-208)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q101	2SD836A
⚠ ★	D101	RB152
★	D102, D103, D104	S5566
★	D105	KZL130
★	D106	KZL061
★	D107 – D112	US1035
★	D113	RD7.5EB

SWITCH

Mark	Symbol & Description		Part No.
⚠ ★★	S101	Push switch	ASG-541

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C101	ACG-502
⚠	C102	ACG-019
	C103	CEAS 472M 25
	C104	CEA 221M 25L
	C105, C110	CCDSL 101J 50
	C106, C107	CEA 221M 16L
	C108	CKDYF 103Z 50
	C109	CEA 222M 25L
	C111	CEA 101M 10L
	C112	CEA 2R2M 50L
	C113, C114	CQMA 104J 50

RESISTORS

Note : When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

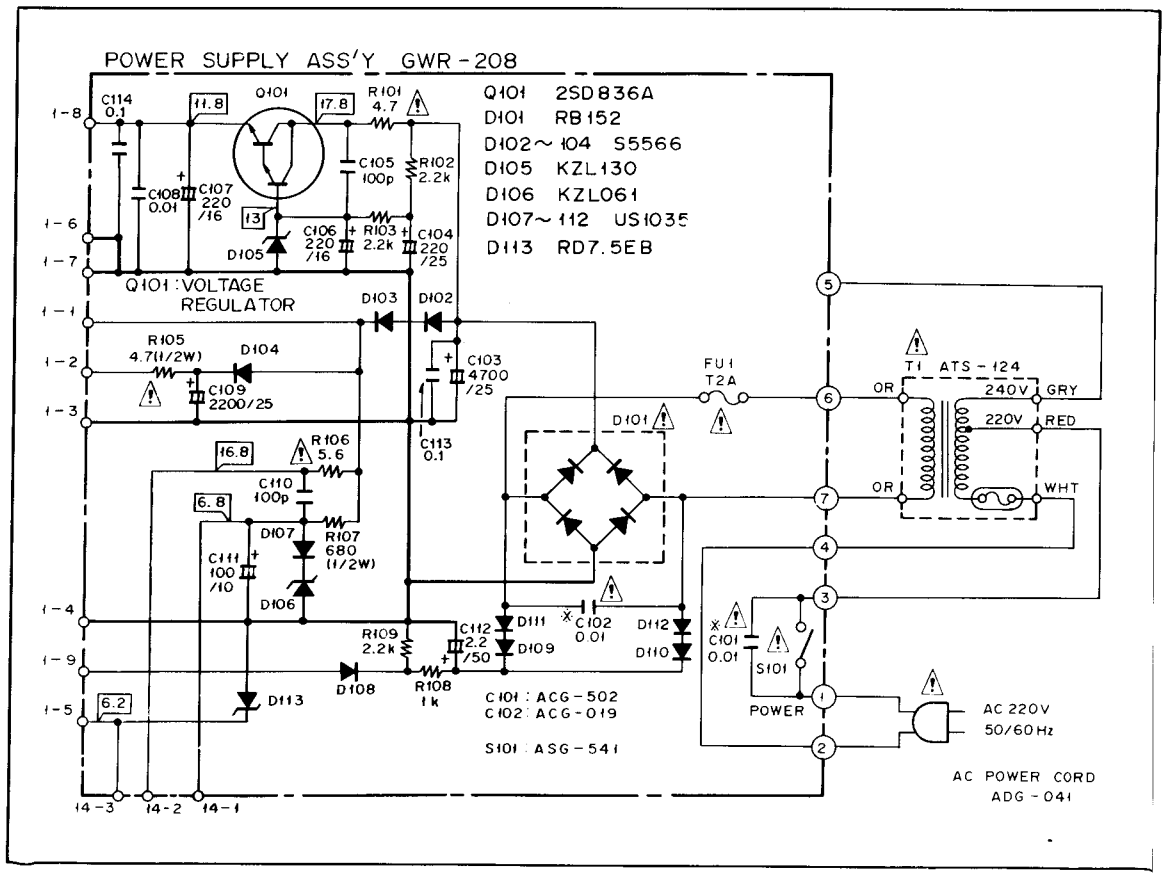
Mark	Symbol & Description	Part No.
⚠	R101	RFA1/4PS4R7J
	R102, R103	RD1/4PM222J
⚠	R105	RD1/2PMFL4R7J
⚠	R106	RFA1/4PL5R6J
	R107	RD1/2PM681J
	R108	RD1/8PM102J
	R109	RD1/8PM222J

OTHERS

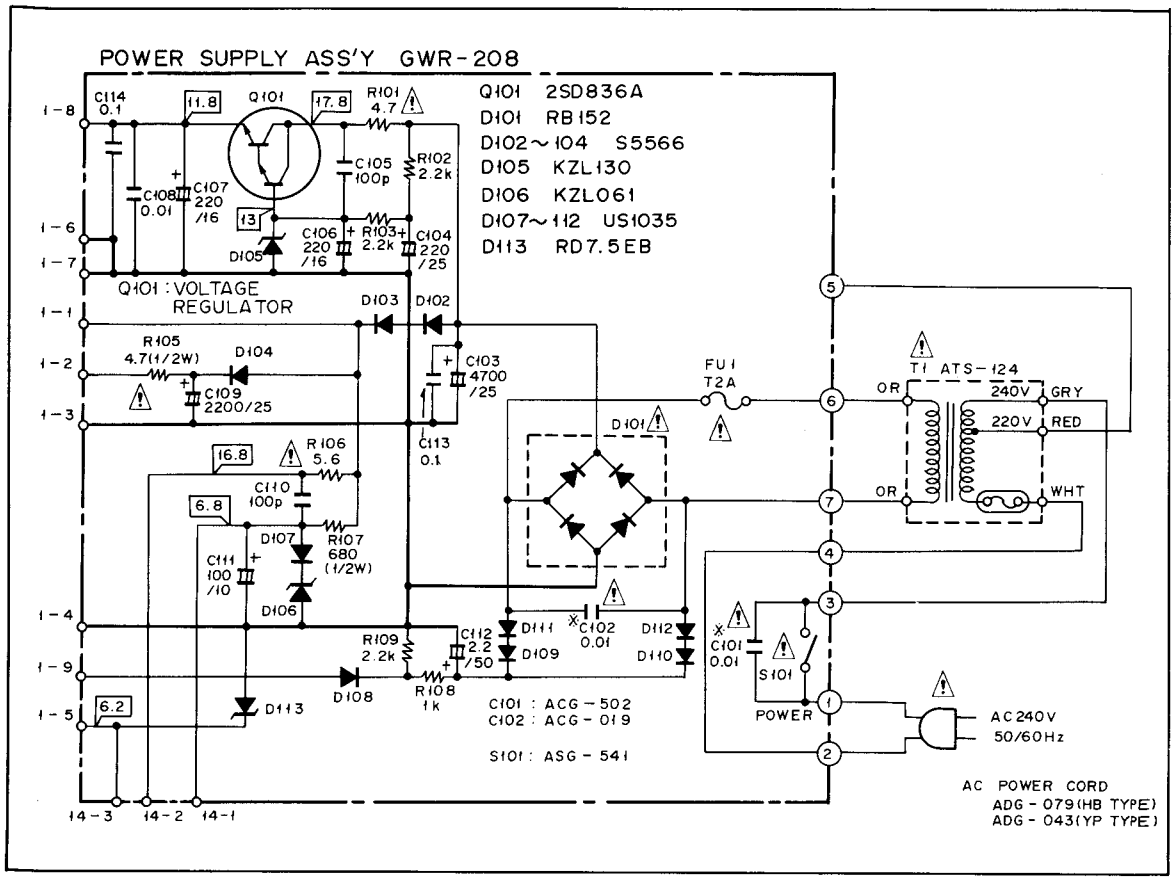
Mark	Symbol & Description	Part No.
	Screw	PBZ30P060FMC

• Circuit of Power Supply Assembly (GWR-208)

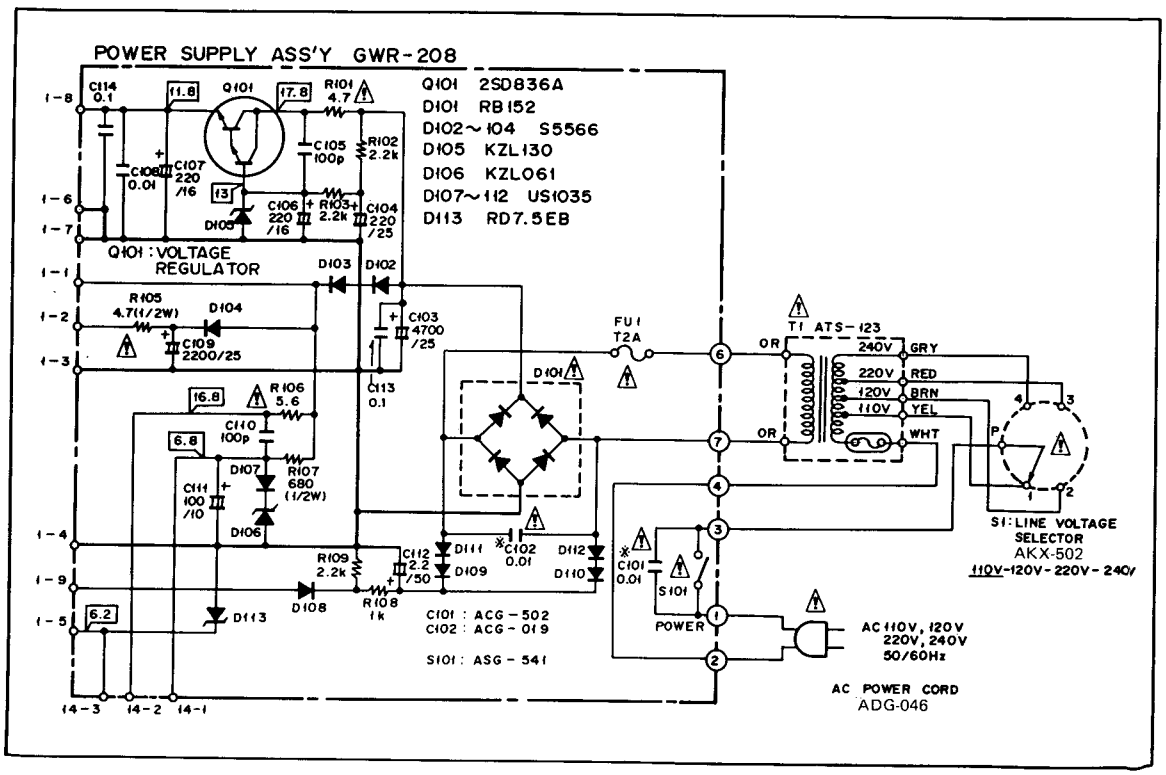
HEM type



HB and YP types



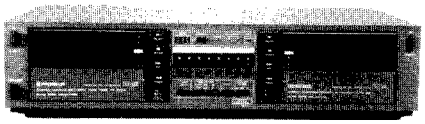
S type



PIONEER®

Service Manual

CIRCUIT & MECHANISM DESCRIPTIONS REPAIR & ADJUSTMENTS



ORDER NO. ARP-489-0

STEREO DOUBLE CASSETTE TAPE DECK

CT-055W

MODEL CT-055W COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	AC120V only	U.S.A. model
HEM	AC220V, 240V (switchable)	European continent model
HB	AC220V, 240V (switchable)	United Kingdom model

- **This service manual is applicable to the KU, HEM and HB types.**
- **As to the HEM and HB types please refer to pages 68 – 70.**
- **Ce manual d'instruction se refère au mode de réglage, en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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1. SPECIFICATIONS

System ..... 4 track, 2-channel stereo
Heads ..... "Hard Permalloy" recording/playback head x 1
"Hard Permalloy" playback head x 1
"Ferrite" erasing head x 1
Dummy erasing head x 1
Motor ..... DC servo motor x 2
Wow/Flutter ..... No more than 0.07% (WRMS)
No more than ±0.20% (DIN)
Fast Winding Time ..... Approx. 110 seconds (C-60 tape)
Frequency Response
−20 dB recording:
Normal tape ..... 30 to 14,500 Hz
(35 to 14,000 Hz ± 3 dB)
Chrome tape ..... 30 to 15,500 Hz
(35 to 14,500 Hz)
Metal tape ..... 30 to 16,000 Hz
(35 to 15,000 Hz ± 3 dB)
Signal-to-Noise Ratio
Dolby NR OFF ..... More than 57 dB
Noise Reduction Effect
Dolby type B NR ON ..... More than 10 dB (at 5 kHz)
Dolby type C NR ON ..... More than 19 dB (at 5 kHz)
Harmonic Distortion ..... No more then 1.0% (0 dB)
Input (Sensitivity)
LINE (INPUT) ..... 90 mV
(Input impedance 83 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 315 mV
(Output impedance 1.5 kΩ)

SUBFUNCTIONS

- One-touch recording
- Built-in Dolby B/C type nosie reduction system
- Full electronic auto-stop mechanism
- IC-based full logic control
- Automatic tape selector function
- Relay play function for continuous playback
- Tape copying function (From Deck A to Deck B)
- Pitch control function (Deck A)
- Music search function (Deck A and B)
- Timer standby function (Deck B)
- REC muting function
- Automatic level control
- Direct program search (Deck A)
- Program memory skip (Deck A)
- Program quick skip (Deck A)
- Random auto edit (From Deck A to Deck B)

MISCELLANEOUS

Power requirements
KU model ..... AC 120 V, 60 Hz
HB model ..... AC 240 V, 50/60 Hz
HEM model ..... AC 220 V, 50/60 Hz
Power consumption
KU, HEM and HB models ..... 17 watts
Dimensions ..... 420 (W) x 102 (H) x 314.5 (D) mm
16-9/16 (W) x 4 (H) x 12-6/16 (D) in
Weight (without packaging) ..... 5.5 kg (12 lb 2 oz)

FURNISHED PARTS

Operating instructions 1
Connection cord with pin plug 2
Cotton swab set 1

NOTES:
1. Reference Tapes:
Normal and LH: DIN 44513/BLATT6 or equiv.
CrO_2 DIN 45513/BLATT7 (CrO_2) or equiv.
2. Reference Recording Level: −10 dBv level at line out (160 nwb/m magnetic level = Philips cassette reference level)
3. Reference Signal: 315 Hz
4. Wow and Flutter: • JIS [3 kHz, with acoustic compensation (weighted) rms value]; DIN [3,150 Hz, with acoustic compensation (weighted) PEAK value DIN 45507
5. Frequency Response: • Measured at − 20 dB level, DOLBY NR OFF, level deviation is ± 6 dB without indication.
6. Signal to Noise Ratio: • Measured at the third harmonic distortion 3% level, weighted (DIN 45513/BLATT7).
7. Sensitivity: Input level (mV) required for reference recording level with input (REC) level controls set to maximum.
8. Maximum Allowable Input: While decreasing settings of input (REC) level controls and increasing level at input jacks, this is the maximum input level (mV) at the point where recording amplifier output wave form becomes clipped.
9. Reference Output Level: −10 dBv level at line out during playback.
10. This model does not employ a recording/playback connector (DIN-type).

NOTE:
Specifications and the design are subject to possible modifications without notice due to improvements.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacture's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

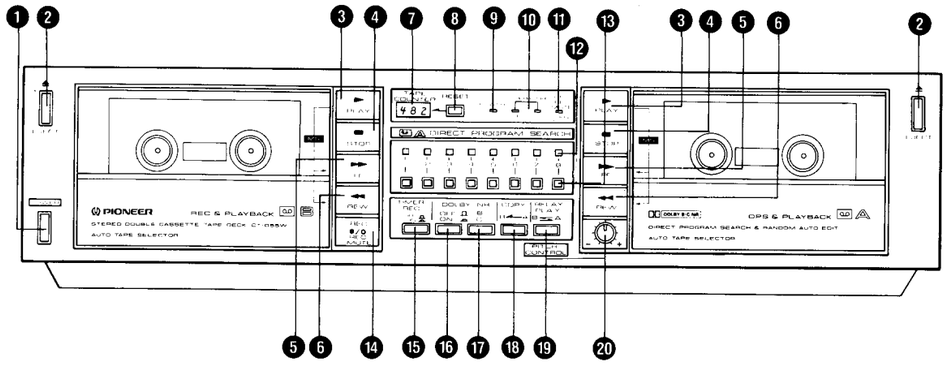
- reorient the receiving antenna
- relocate the cassette tape deck with respect to the receiver
- move the cassette tape deck away from the receiver
- plug the cassette tape deck into a different outlet so that the cassette tape deck and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful.
"How to Identify and Resolve Radio-TV Interference Problems".
This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

The above instructions apply only to units which will be operated in the United States.

2. FRONT PANEL FACILITIES

DECK A is for exclusive use on playback. DECK B can be used for either playback or recording.



❶ POWER SWITCH

When this switch is depressed, power is turned ON, and when it is depressed again, power is turned OFF. When you depress the power switch, be sure the timer switch (TIMER REC) is set to the OFF position.

- After the switch is set to the ON position, the muting circuit is activated and so the unit will not operate for about 4 seconds.
- When the POWER switch is set to OFF while the tape deck is operating, the operational mode is released and the unit is set to the stop mode.

❷ EJECT BUTTON

Depress this button to open the cassette door. To close the cassette door, push the top back until it locks.
Do not press this button when the tape is in motion.

❸ PLAY SWITCH (►)

Press this switch to play back a tape.

❹ STOP SWITCH (■)

Press this switch to stop the tape travel and to release the operating switches.

❺ FF SWITCH (►►)

Press this switch to send the tape forward at high speed. (The tape will travel from left to right.)

❻ REW SWITCH (◄◄)

Press this switch to rewind the tape at high speed. (The tape will travel from right to left.)

❼ TAPE COUNTER

This indicates the transport position of the tape loaded in Deck B with a 3-digit number.

❽ COUNTER RESET BUTTON

Depress this button to reset the tape counter display to 000.

❾ POWER INDICATOR (POWER)

This indicator lights when the POWER switch is set to ON.

❿ DOLBY INDICATORS (DOLBY NR)

These light when the DOLBY NR switch is set to ON .
[B]: This lights when the B type Dolby noise reduction system is operating.
[C]: This lights when the C type Dolby noise reduction system is operating.

⓫ REC, REC/MUTE, COPY INDICATOR

This indicator lights when the deck is in the recording mode. During recording muting, the indicator flashes rapidly. During tape copying, the indicator flashes slowly.

⓬ PROGRAM INDICATOR

⓭ DIRECT PROGRAM SEARCH SWITCH

Press to memorize program selections.

⓮ REC/REC MUTE SWITCH (● / ○)

This switch functions as both the recording switch and record muting switch. When pressed, the unit is set to the recording mode and when it is kept pressed during recording, it functions as the recording mute switch.

Recording switch

Press the switch when recording sound onto the tape. The REC/MUTE indicator now lights. If the accidental erasure prevention tabs on the cassette shell have been broken out or the tape has not been loaded, the unit will not be set to the recording mode even if this switch is pressed. Press the STOP switch (■) to release the recording mode.

Recording mute switch

When this switch is pressed during recording, unrecorded blanks can be created for as long as the switch is kept pressed. While kept pressed, the REC/MUTE indicator will flash rapidly. Use this switch for efficient editing of tapes with sufficient blanks between the programs and for providing the unrecorded blanks which are required to operate the music search function.

This switch does not lock and so functions only while it is kept in the pressed position. When pressed during a recording, no sound is recorded and so the switch should not be pressed unless absolutely necessary.

⓯ TIMER REC SWITCH

This switch is used when an optional audio timer is utilized for unattended recording.
Timer recording is a function of DECK B. DECK A cannot be used for timer recording.

NOTE:
The timer switch should always be in the OFF position when not performing timer recording. If a cassette tape is inserted and the switch is set to the REC position, the unit will automatically enter the recording mode whenever the power switch is turned on.

⓰ *DOLBY NR SWITCH (DOLBY NR ON/OFF)

Depress this switch to ON for recording with the built-in Dolby Noise Reduction system and for playback of tapes which have been recorded using the Dolby Noise Reduction system.
For other tapes, do not press this switch.

*Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

⓱ DOLBY B/C SELECTOR SWITCH (DOLBY NR B/C)

This deck is equipped with both type B and type C Dolby noise reduction systems. After the DOLBY NR ON/OFF switch is pressed, select type B or C using this switch. The Dolby indicator corresponding to the switch position lights.

⓲ COPY SWITCH (B → A)

"Copying" refers to the process of transferring the recorded contents on a pre-recorded tape onto another tape. The pre-recorded tape is loaded into Deck A and its contents are recorded onto Deck B. When the switch is pressed, the REC/MUTE indicator will flash slowly. Tape copying cannot be performed from Deck B to Deck A. The playback tape is loaded into Deck A while the recording tape is loaded into Deck B. When this switch is pressed, Deck A is automatically set to the playback mode and Deck B is automatically set to the recording mode, and the tapes start to move simultaneously.

⓳ RELAY PLAY SWITCH (B ⇄ A)

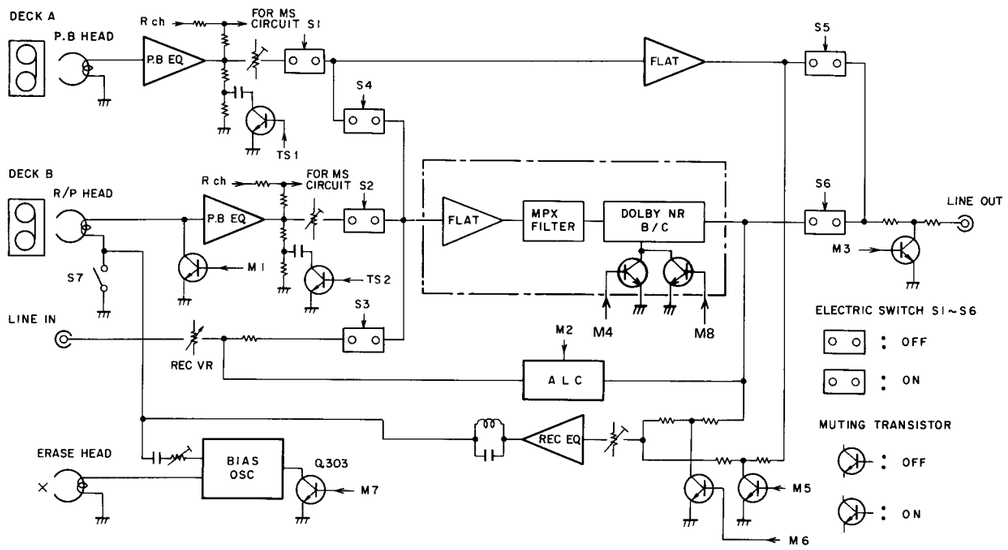
Press this switch for relay play. When pressed, the program indicators "1" and "8" will light alternately. When the tape loaded in one deck has finished playing and the tape comes to the end, the tape in the other deck automatically starts playback. Relay play is possible from Deck A to Deck B and vice versa.

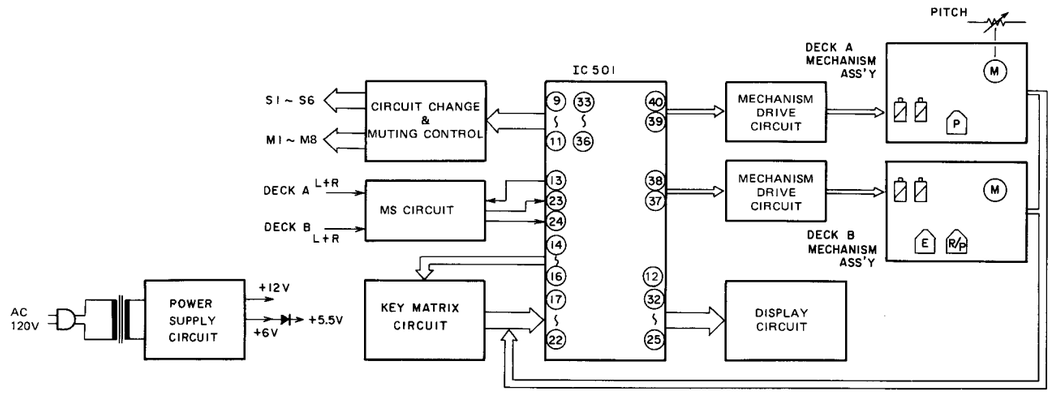
⓴ PITCH CONTROL

This can be used to vary the tape speed of Deck A across a ± 6% range. The speed increases when the control is rotated clockwise (↻) and reduces when rotated counterclockwise (↺); the musical intervals are made higher or lower, respectively. The standard speed is obtained at the control's center clickstop position (▼). Use the control to adjust the speed when adjusting the intervals with mixing recording or playback or when playing back a tape recorded on another tape deck on your own deck.

NOTE:
Set this control to the clickstop position (▼) when using the music search function. If it is left rotated clockwise, it will not be possible to detect the unrecorded blanks between the programs on the tape during fast forwarding or rewinding operations.

3. BLOCK DIAGRAM





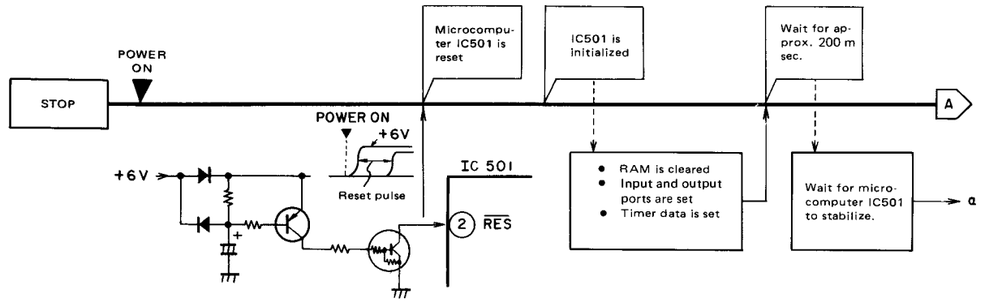
4. CIRCUIT DESCRIPTIONS

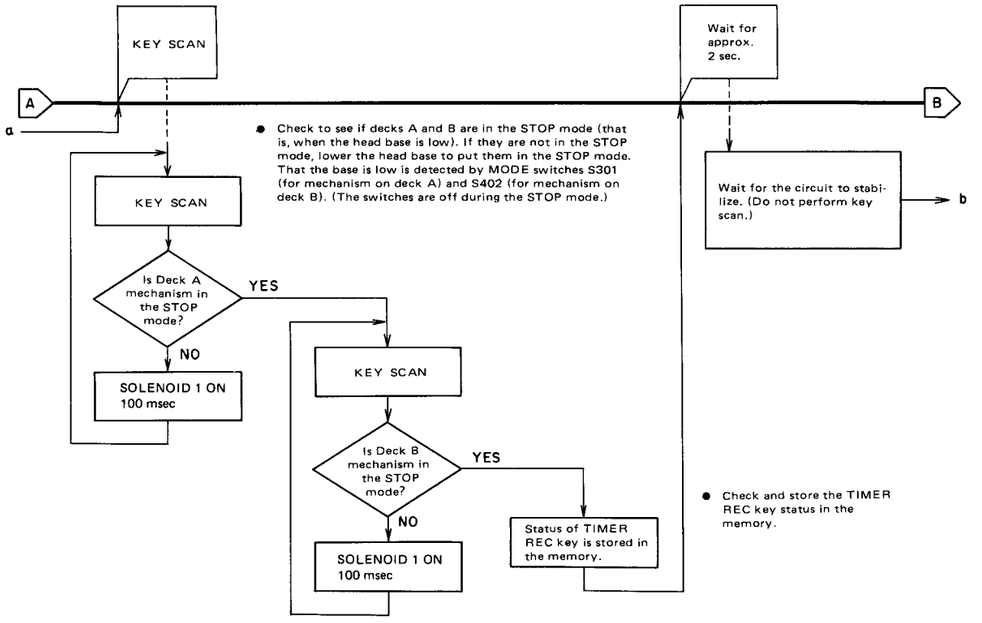
4.1 CONTROL PART

This model carries out all of its controls by the use of a microcomputer (IC 501). Modes and programs are selected by the key input supplied into the key matrix circuit (Fig. 4-4), while the microcomputer controls various sections such as mechanism drive, circuit switch-over, and mute control circuits by feeding command outputs into those circuits. The display circuit is provided to indicate the music program being selected and REC, DOLBY NR, etc. being turned on or off.

• POWER ON

When the machine is turned on, the built-in microcomputer is initialized (Fig. 4-1) and is ready to receive input sent from the key.




KEY SCAN
Wait for approx. 2 sec.
A
B
a
• Check to see if decks A and B are in the STOP mode (that is, when the head base is low). If they are not in the STOP mode, lower the head base to put them in the STOP mode. That the base is low is detected by MODE switches S301 (for mechanism on deck A) and S402 (for mechanism on deck B). (The switches are off during the STOP mode.)
KEY SCAN
Wait for the circuit to stabilize. (Do not perform key scan.)
b
Is Deck A mechanism in the STOP mode?
YES
NO
SOLENOID 1 ON 100 msec
KEY SCAN
Is Deck B mechanism in the STOP mode?
YES
NO
SOLENOID 1 ON 100 msec
Status of TIMER REC key is stored in the memory.
• Check and store the TIMER REC key status in the memory.

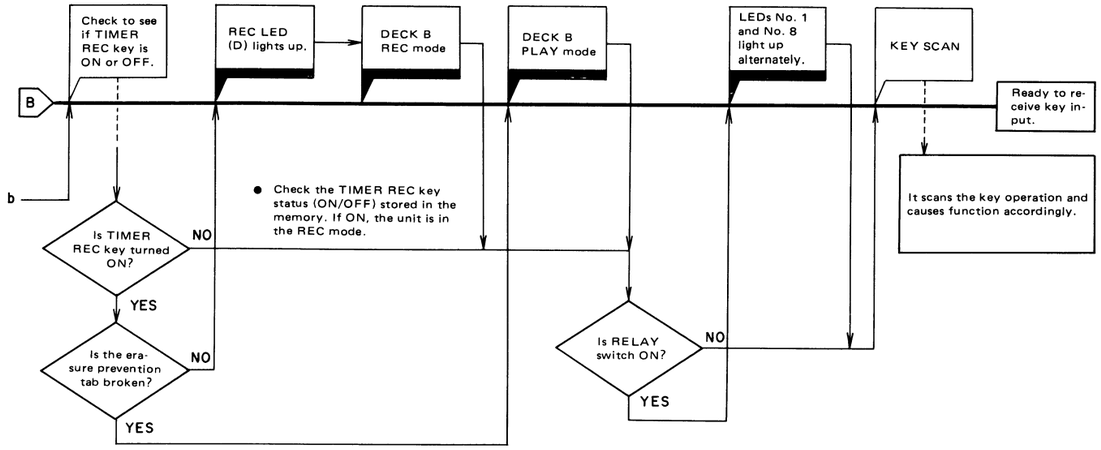

Check to see if TIMER REC key is ON or OFF.
REC LED (D) lights up.
DECK B REC mode
DECK B PLAY mode
LEDs No. 1 and No. 8 light up alternately.
KEY SCAN
Ready to receive key input.
B
b
Check the TIMER REC key status (ON/OFF) stored in the memory. If ON, the unit is in the REC mode.
It scans the key operation and causes function accordingly.
Is TIMER REC key turned ON?
NO
YES
Is the erasure prevention tab broken?
NO
YES
Is RELAY switch ON?
NO
YES

Fig. 4-1

4.2 KEY MATRIX CIRCUIT

The key matrix circuit, composed as in Fig. 4-4, sends scan pulse to control the mode input for decks A and B as well as program selection input. The scan pulse decodes outputs from pins 14, 15, and 16 on the microcomputer, sending 10 m sec pulse from pins 1 through 5 of IC 502 as shown in Fig. 4-2.
This pulse, in turn, is fed into one of the pins 17 through 22 of IC 501 as the key matrix input corresponding to the key input, thus allowing the microcomputer to send output signals matched with key inputs to each section.

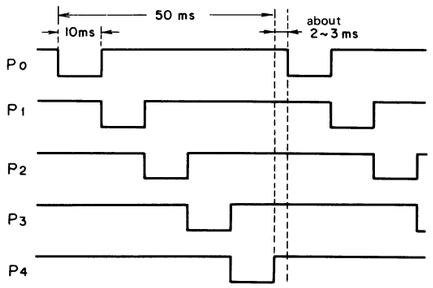


Fig. 4-2 Control Scan Pulse

C	B	A	Po	P1	P2	P3	P4
0	0	1	L	H	H	H	H
0	1	0	H	L	H	H	H
0	1	1	H	H	L	H	H
1	0	0	H	H	H	L	H
1	0	1	H	H	H	H	L

Fig. 4-3

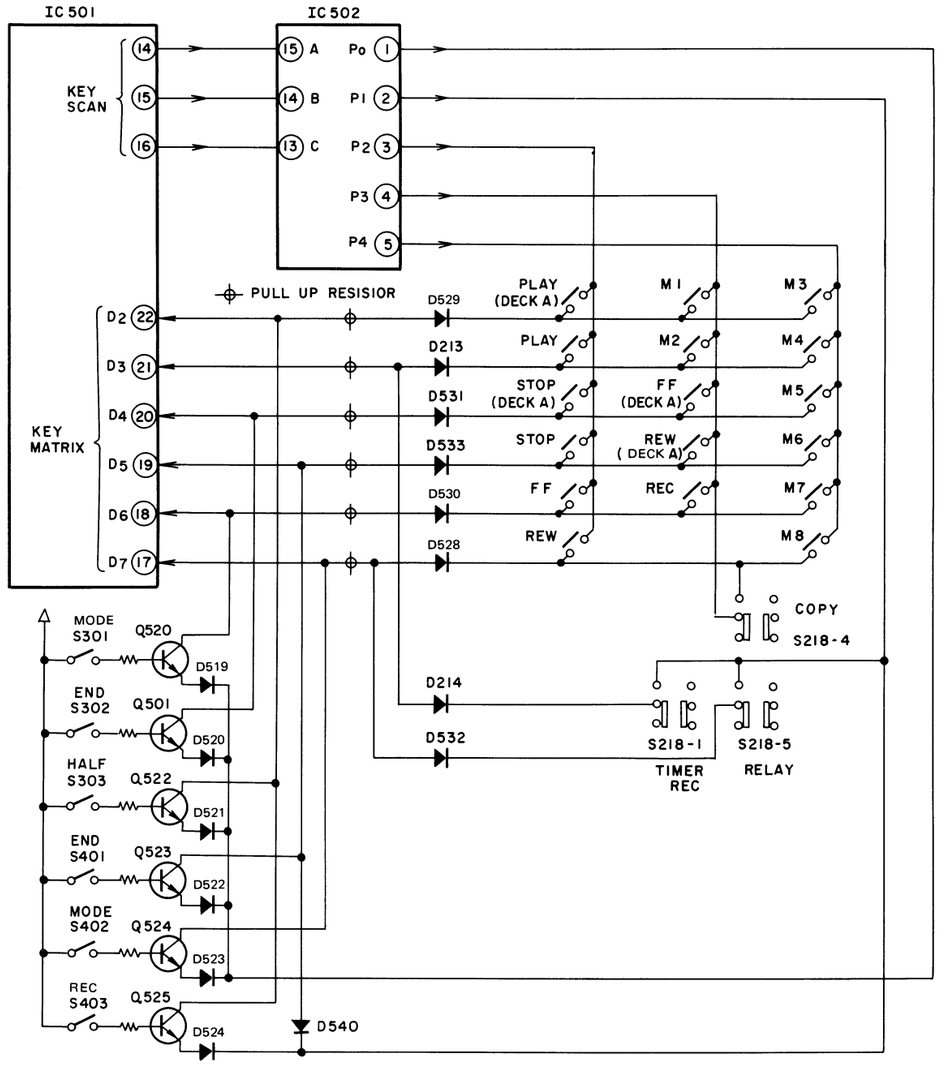


Fig. 4-4 Key Matrix Circuit

4.3 SIGNAL ROUTES

Depending on the modes selected on decks A and B, signals pass through different routes, controlled by the electronic switch and the muting transistor, which are turned on and off by the output from the microcomputer. The signals pass through different routes as shown in Fig. 4-6 to Fig. 4-11.

	FUNCTION		COPY SWITCH	CONTROL PARTS OUTPUT											
	DECK A	DECK B		S1	S2	S3,S5	S4,S6	S7	M1	M2,M4	M3	M5	M6	M7	M8
1	STOP	STOP	OFF	L	L	L	H	ON	L	H	H	H	H	L	L
2	STOP	STOP	*ON	H	L	L	H	OFF	H	L	L	L	H	H	H
3	PLAY	STOP	–	H	L	L	H	ON	L	H	L	H	H	L	L
4	STOP	PLAY	–	L	H	L	H	ON	L	H	L	H	H	L	L
5	STOP	REC	–	L	L	H	L	OFF	H	L	H	H	L	H	L
6	PLAY	REC	–	H	L	H	L	OFF	H	L	L	H	L	H	L

* If COPY switch is turned ON with both decks A and B in STOP mode, it causes decks A and B to be set in PLAY and REC modes respectively, resulting in different signal routes.

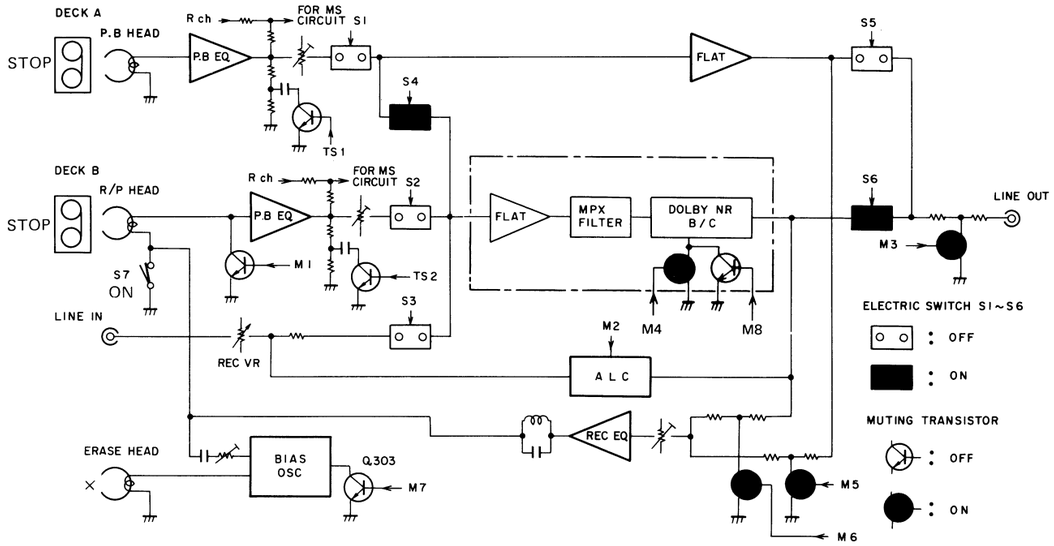
DECK A	DECK B
FF or REW	STOP
STOP	FF or REW
FF	FF
FF	REW
REW	FF
MS	

→ Equal in status to both decks A and B set in STOP mode.

Fig. 4-5

MC-Service

1. Deck A : STOP Deck B : STOP



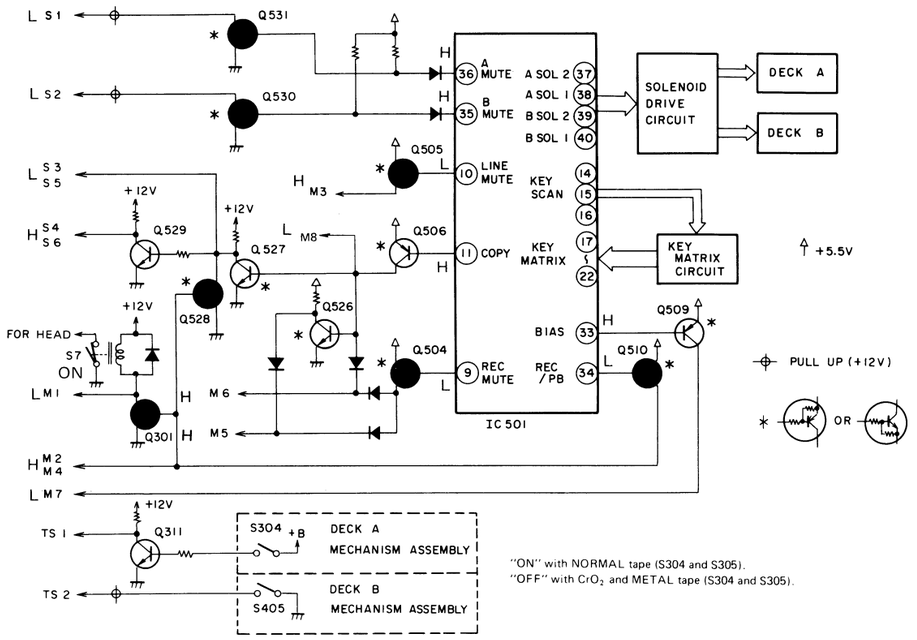
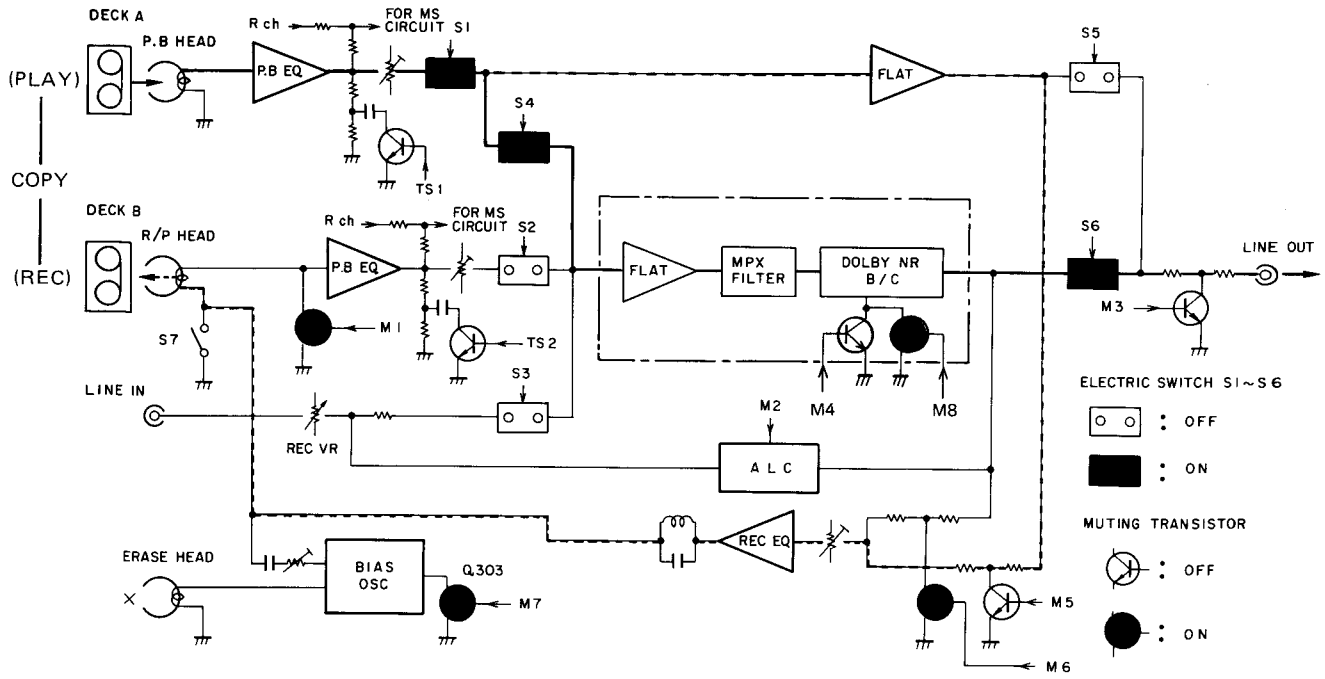


Fig. 4-6 Signal route 1

2. COPY switch ON



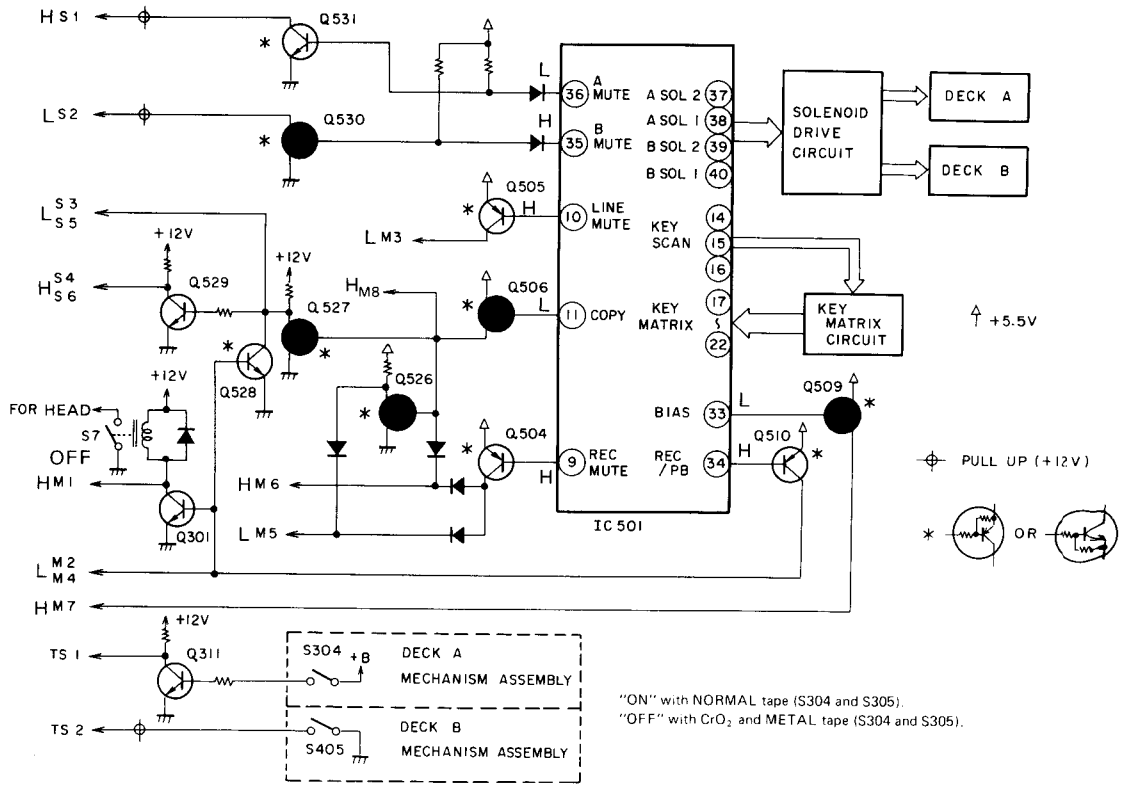
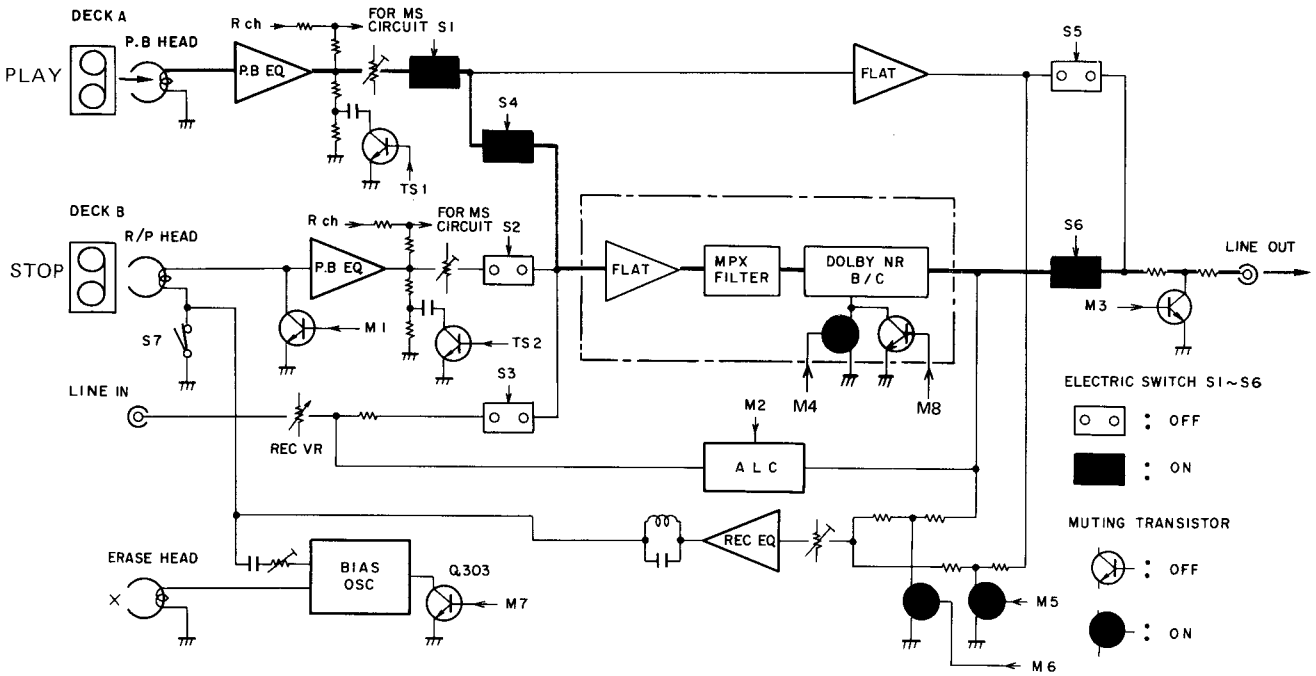


Fig. 4-7 Signal route 2

3. Deck A : PLAY Deck B : STOP



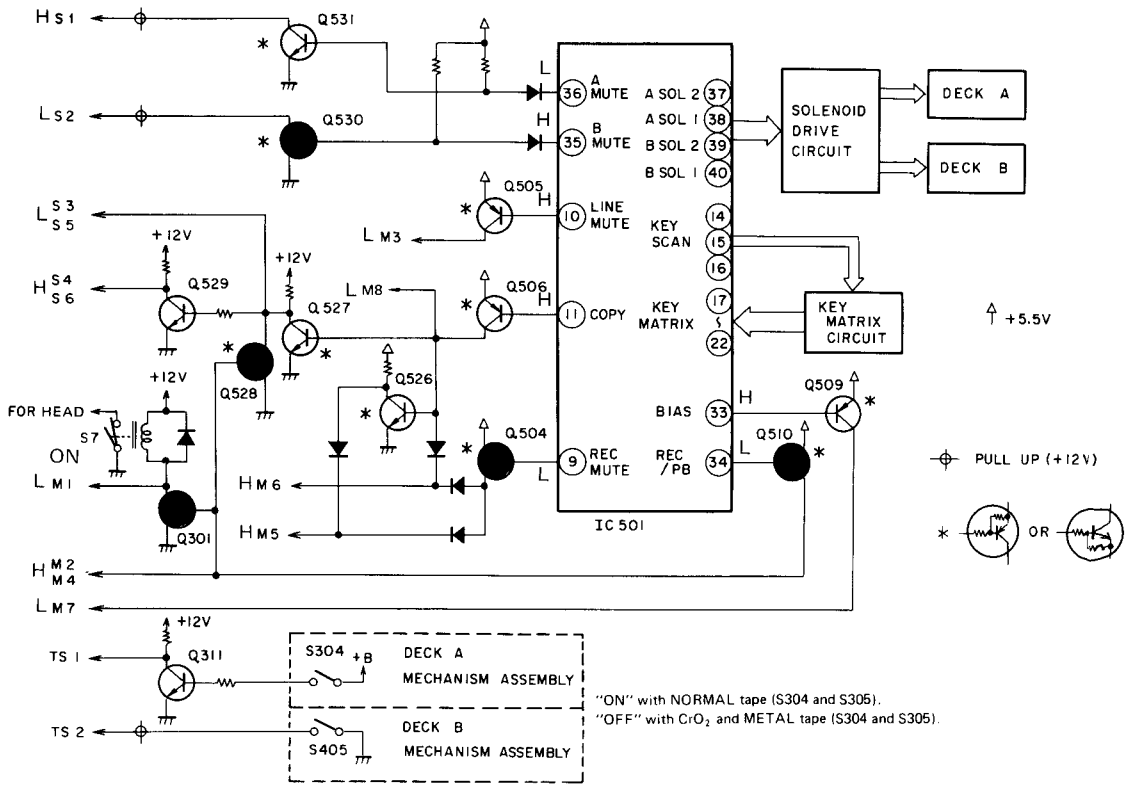
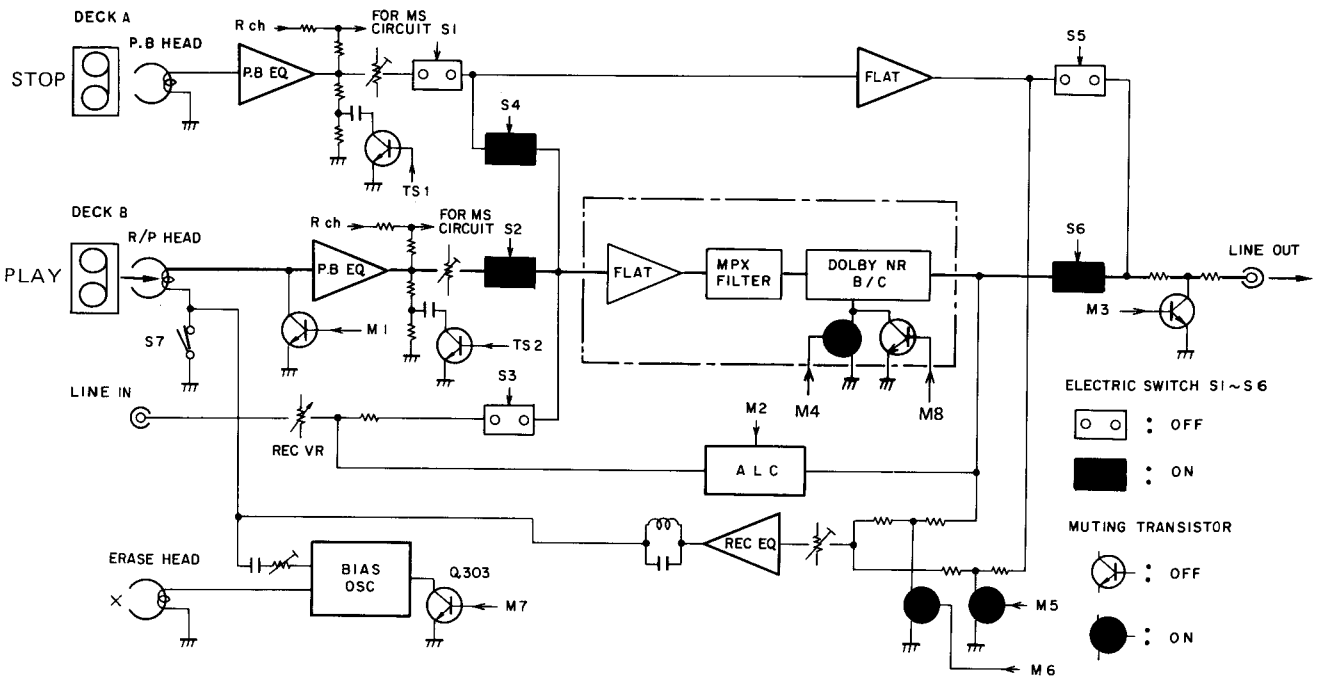


Fig. 4-8 Signal route 3

4. Deck A : STOP Deck B : PLAY



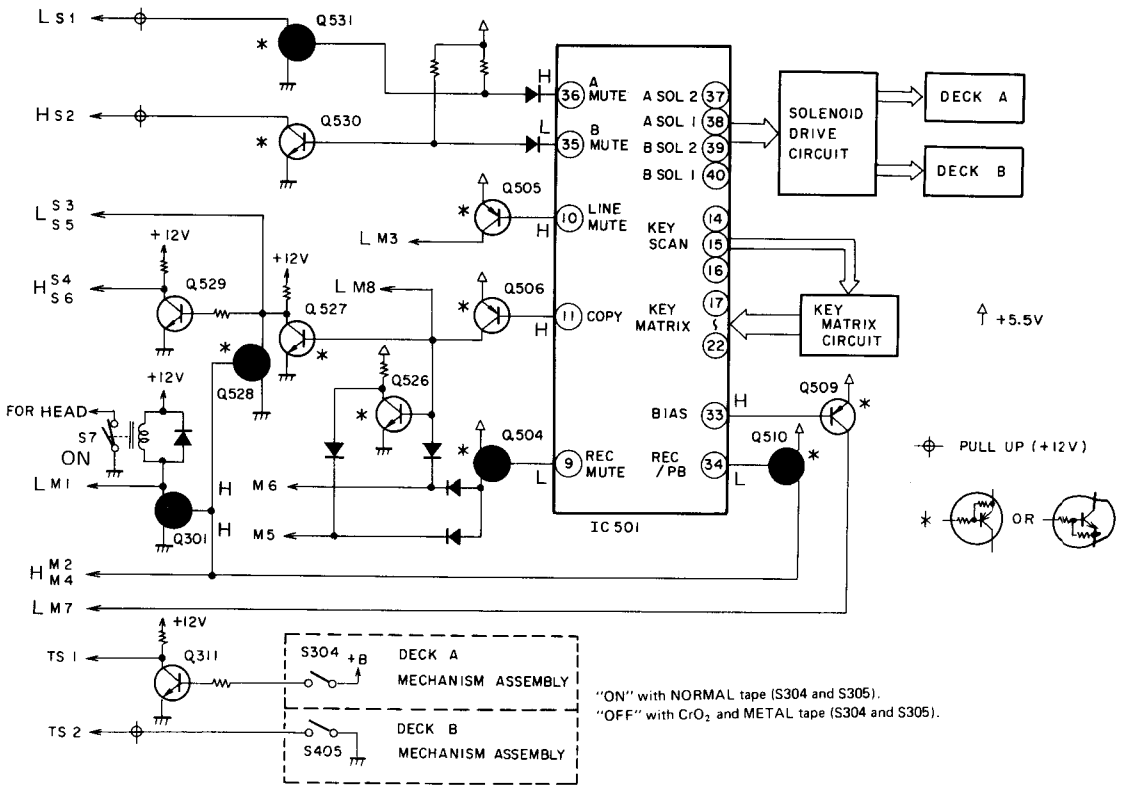
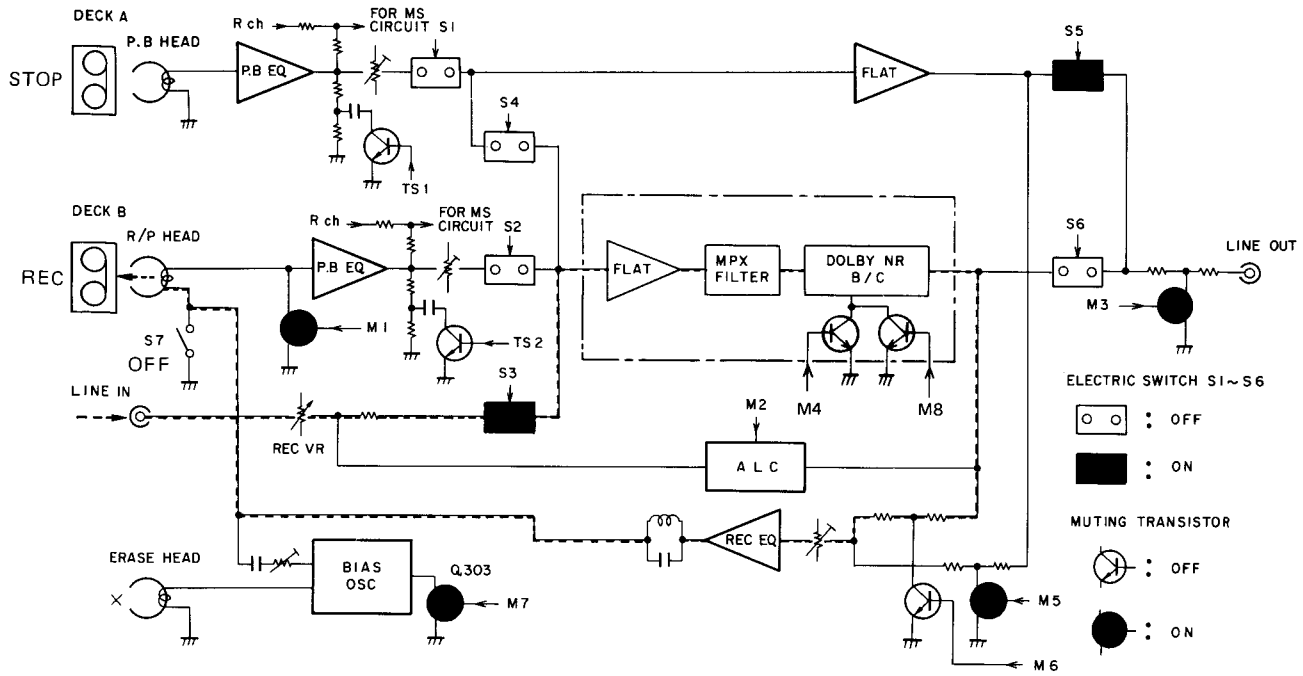


Fig. 4-9 Signal route 4

5. Deck A : STOP Deck B : REC



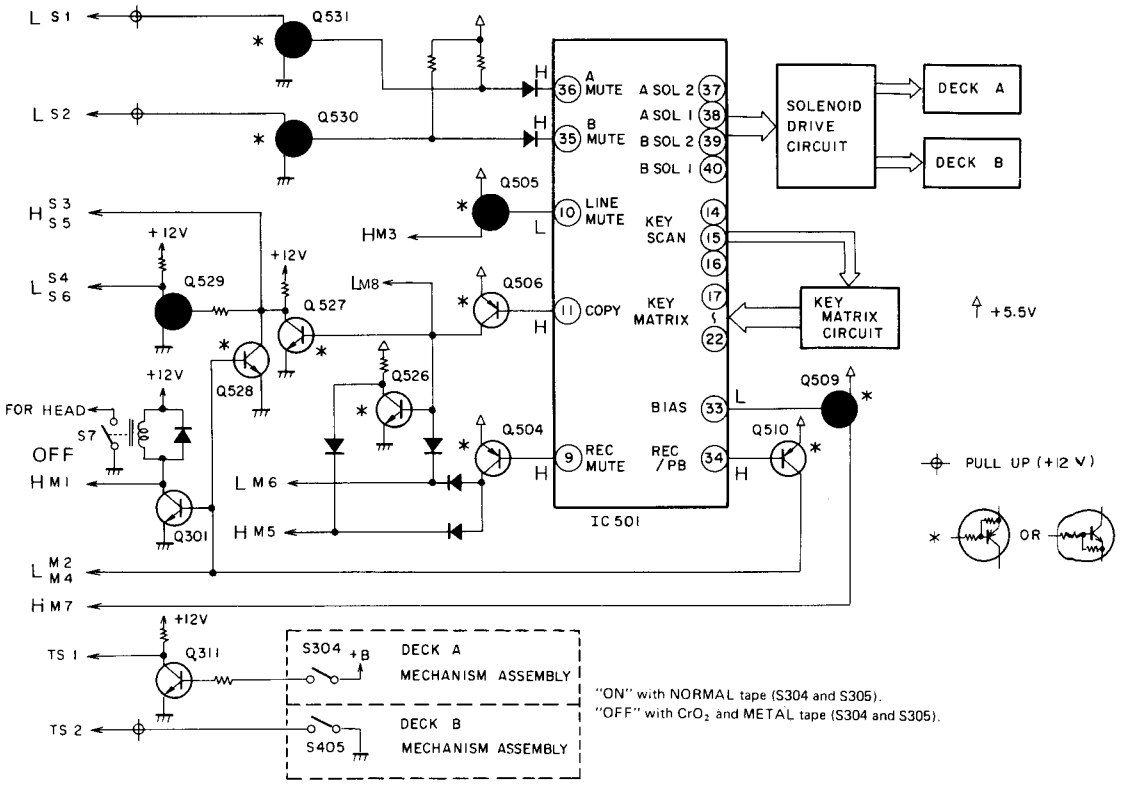
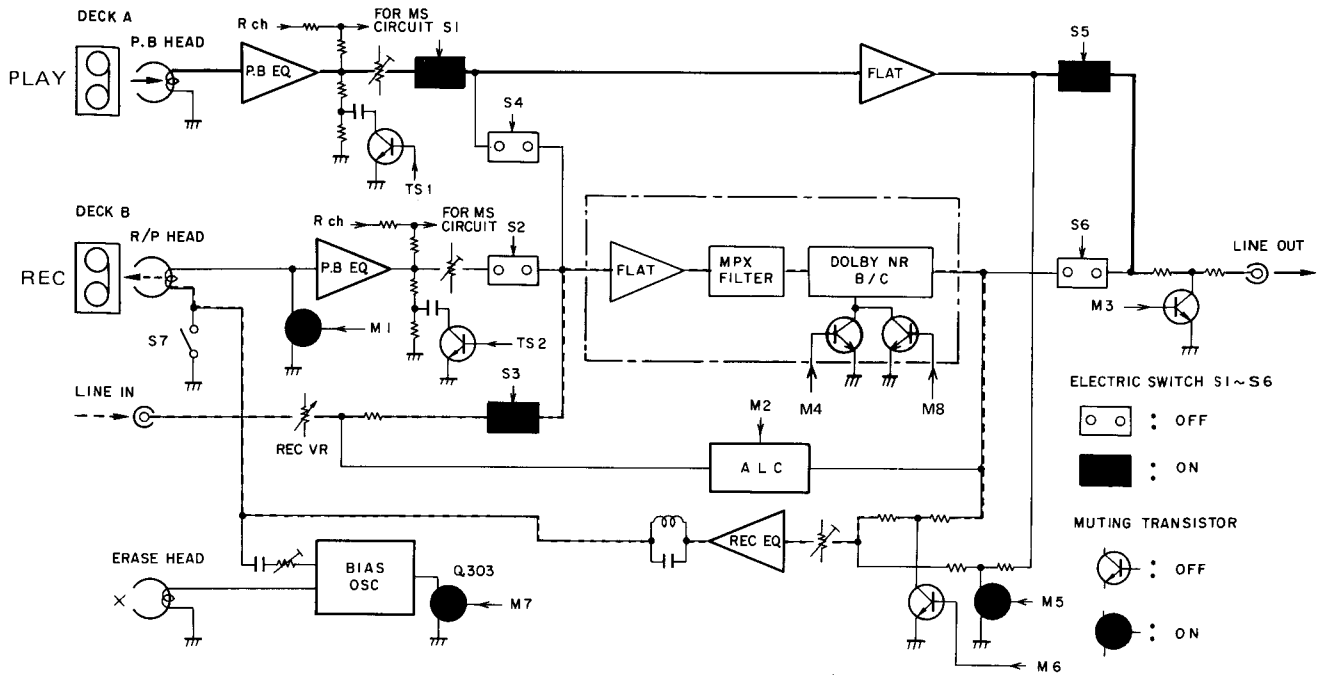


Fig. 4-10 Signal route 5

6. Deck A : PLAY Deck B : REC



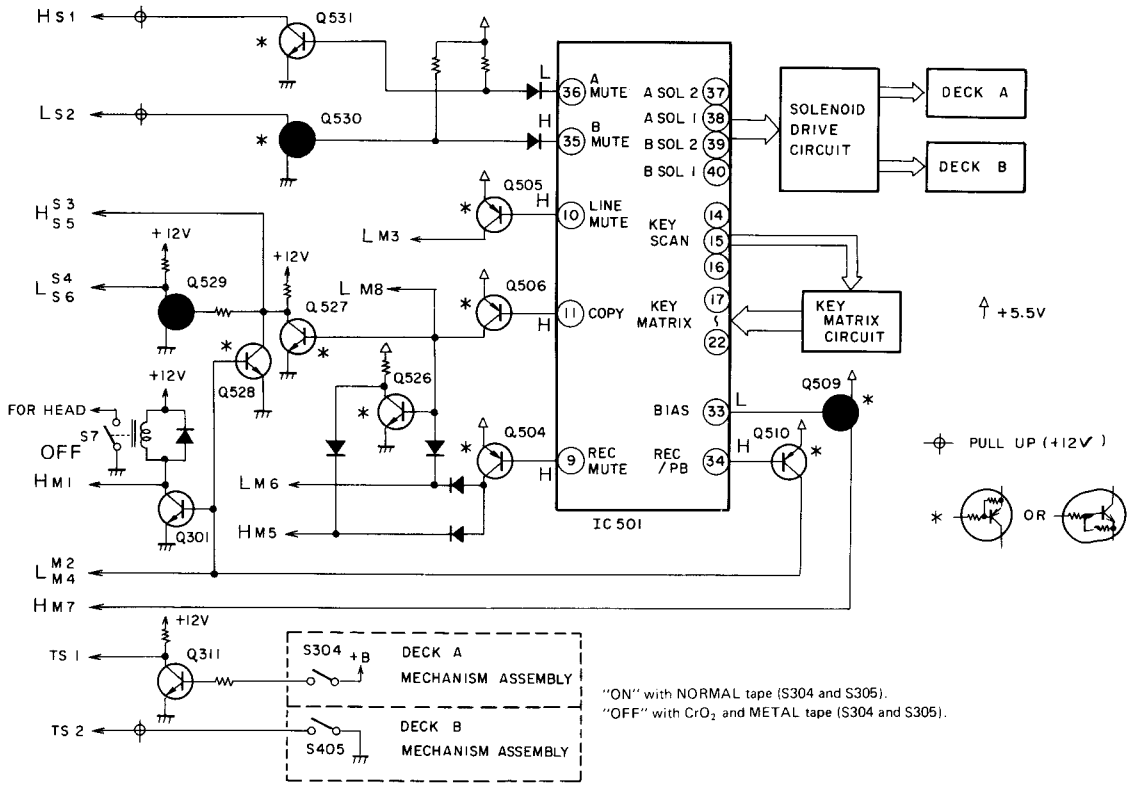


Fig. 4-11 Signal route 6

4.4 DIRECT MUSIC SEARCH

For direct search, the tape is first rewound completely in REW mode. With one of the search keys depressed, the tape is then fast-forwarded to the beginning of the program desired (the intervals between programs are counted during FF mode).
When the beginning of the wanted program is reached, the tape is set in the STANDBY mode. Depressing the PLAY key allows the program to start. In this way, the desired program is automatically located for playback by depressing the program No. key.
The direct music search mode allows desired programs to be played back in a desired sequence regardless of the order in which the programs were originally recorded (for the first program to be played back, tape is rewound until the beginning of the tape is reached; from the second program onward, direct search takes place). Moreover, the same program can be played back as many times as the program No. key is repeatedly depressed (up to 16 times). When used for copying, this mode enables the desired number of programs on the original tape to be dubbed in any desired sequence. During copying, the non-recorded sections between the programs being dubbed are automatically adjusted for a uniform interval (automatic random editing).

4.5 MODE CHANGE IN THE MECHANICAL SECTION

The mode selection for the mechanical section is controlled by the output (pins 37 through 40) from the microcomputer (IC 501) corresponding to the key input. The output from the microcomputer turns on and off SOL 1 and SOL 2 of the mechanical section, which trigger mode changes with the power assist mechanism using the rotary power of the capstan motor. The mechanical section changes its mode as shown in the Fig. 4-13, and this always via the stop mode. The timing chart in Fig. 4-15 shows the control signals for different modes sent from the microcomputer.

DIRECT PROGRAM SEARCH

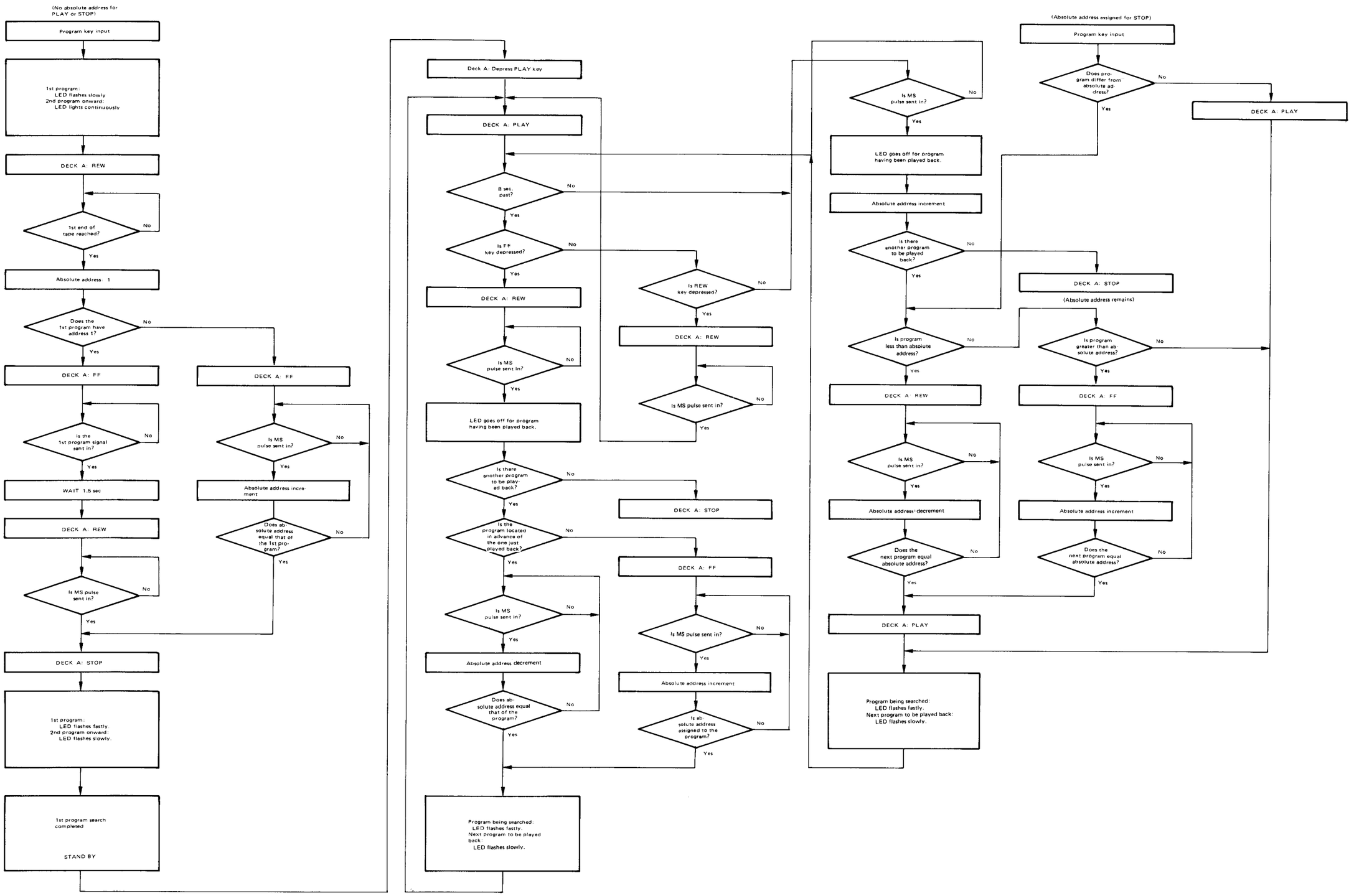


Fig. 4-12 Direct Program Search Flowchart

Mechanical Mode Change Chart

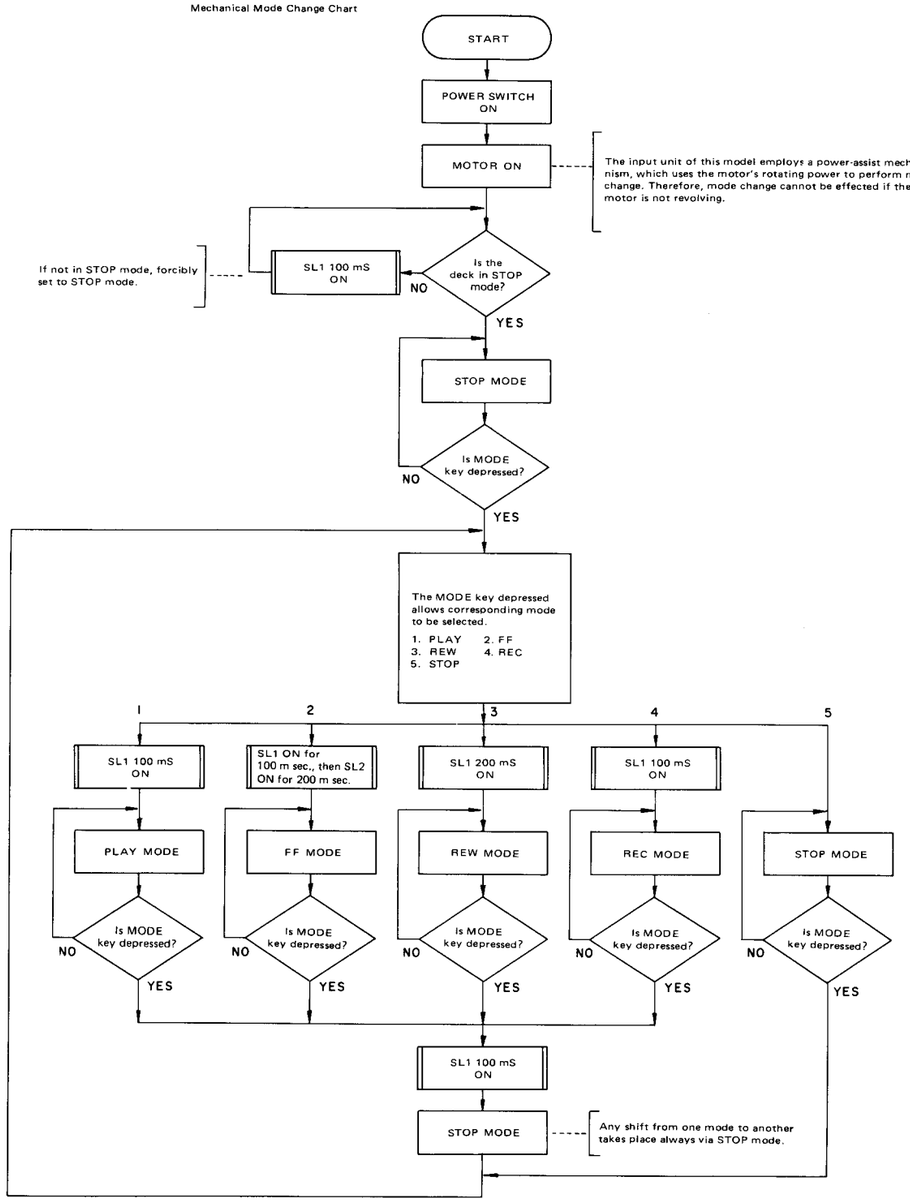

START
POWER SWITCH ON
MOTOR ON
The input unit of this model employs a power-assist mechanism, which uses the motor's rotating power to perform mode change. Therefore, mode change cannot be effected if the motor is not revolving.
If not in STOP mode, forcibly set to STOP mode.
SL1 100 mS ON
Is the deck in STOP mode?
NO
YES
STOP MODE
Is MODE key depressed?
NO
YES
The MODE key depressed allows corresponding mode to be selected.
1. PLAY 2. FF
3. REW 4. REC
5. STOP
1
2
3
4
5
SL1 100 mS ON
SL1 ON for 100 m sec., then SL2 ON for 200 m sec.
SL1 200 mS ON
SL1 100 mS ON
PLAY MODE
FF MODE
REW MODE
REC MODE
STOP MODE
Is MODE key depressed?
NO
YES
SL1 100 mS ON
STOP MODE
Any shift from one mode to another takes place always via STOP mode.

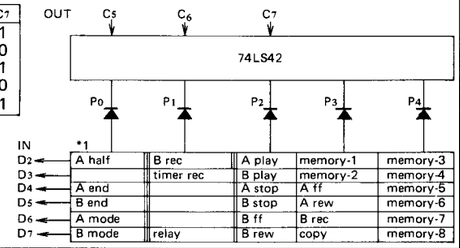
Fig. 4-13

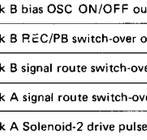
• IC TECHNICAL DATA

PD3012

No.	Symbol	Name	I/O	Description
1	Vss	Vss	–	GND
2	RES	RES	IN	Reset
3	INT	INT		External interrupt/POWER OFF causes L (This automatically leads to STOP mode).
4	Vcc	Vcc	–	+5.5V
5	X TAL	X TAL	IN	4.0MHz Crystal resonator
6	EX TAL	EX TAL		
7	NUM	NUM	–	GND
8	TIMER	TIMER	–	Normally at H.
9	C0	REC MUTE	OUT	Deck B Rec mute output. L level turns REC mute ON.
10	C1	LINE MUTE		Line mute output. L level turns LINE mute ON.
11	C2	COPY		Signal route change output. L output during COPY mode; H otherwise.
12	C3	REC IND		Deck B recording LED drive output *2.
13	C4	MS		Deck A time constant switch output during music search H during MS mode.
14	C5	KEY SCAN		C5 ~ C7 output: C5 C6 C7 = 0 0 1 / 0 1 0 / 0 1 1 / 1 0 0 / 1 0 1
15	C6			
16	C7			
17	D7	KEY MATRIX	IN	P0 ~ P4 outputs: P0 P1 P2 P3 P4
18	D6			
19	D5			
20	D4			
21	D3			
22	D2			
23	D1	B MS		Deck B MS pulse detection terminals: detect L MS pulses.
24	D0	A MS		Deck A MS pulse detection terminals: detect L MS pulses.
25	B0	MEMORY LED 8	OUT	Memory display LED drive output (No. 8); L lights up LED. *2
26	B1	MEMORY LED 7		Memory display LED drive output (No. 7); L lights up LED. *2
27	B2	MEMORY LED 6		Memory display LED drive output (No. 6); L lights up LED. *2
28	D3	MEMORY LED 5		Memory display LED drive output (No. 5); L lights up LED. *2
29	B4	MEMORY LED 4		Memory display LED drive output (No 4); L lights up LED. *2
30	B5	MEMORY LED 3		Memory display LED drive output (No. 3); L lights up LED. *2
31	B6	MEMORY LED 2		Memory display LED drive output (No. 2); L lights up LED. *2
32	B7	MEMORY LED 1		Memory display LED drive output (No. 1); L lights up LED. *2
33	A0	BIAS		Deck B bias OSC ON/OFF output: L during REC mode.
34	A1	REC / PB		Deck B REC/PB switch-over output: H during REC mode.
35	A2	B MUTE		Deck B signal route switch-over: L during PLAY on Deck B.
36	A3	A MUTE		Deck A signal route switch-over: L during PLAY/COPY on Deck A.
37	A4	A SOL 2		Deck A Solenoid-2 drive pulse output: L activated.
38	A5	A SOL 1		Deck A Solenoid-1 drive pulse output: L activated.
39	A6	B SOL 2		Deck B Solenoid-2 drive pulse output: L activated.
40	A7	B SOL 1		Deck B Solenoid-1 drive pulse output: L activated.

C5	C6	C7
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1



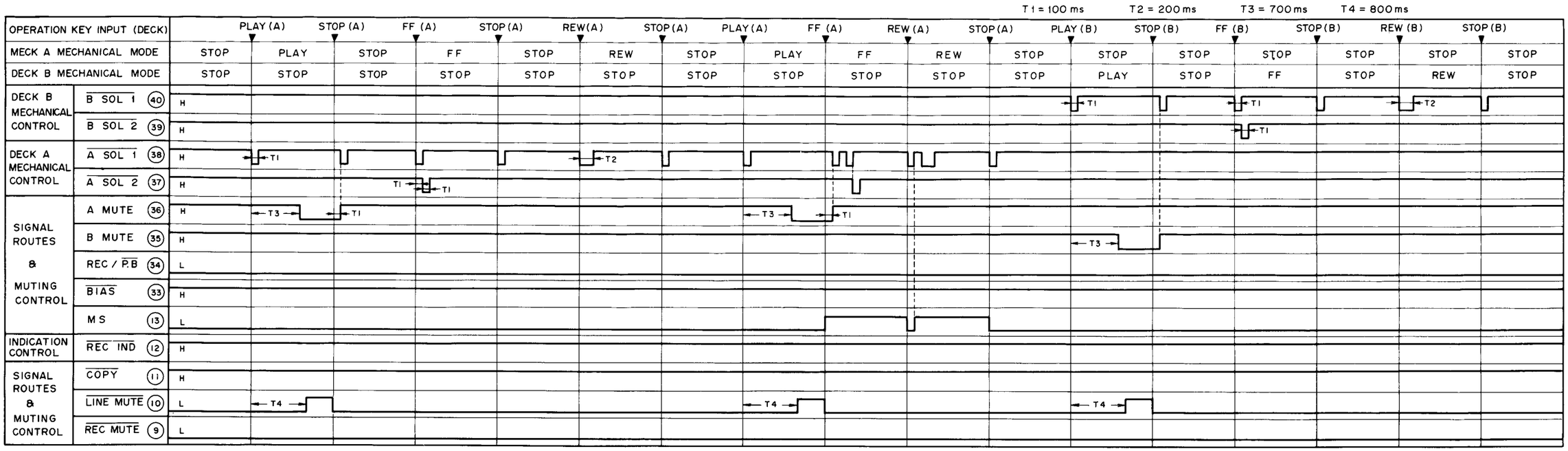


*1 Transistor switch
Lock switch
Tactual switch

*2 Output timing
LED lighted
LED flashing slowly
LED flashing fastly

Fig. 4-14

- **Timing Chart**


T1 = 100 ms
T2 = 200 ms
T3 = 700 ms
T4 = 800 ms
OPERATION KEY INPUT (DECK)
PLAY (A) STOP (A) FF (A) STOP (A) REW (A) STOP (A) PLAY (A) FF (A) REW (A) STOP (A) PLAY (B) STOP (B) FF (B) STOP (B) REW (B) STOP (B)
MECK A MECHANICAL MODE
STOP PLAY STOP FF STOP REW STOP PLAY FF REW STOP STOP STOP STOP STOP STOP STOP
DECK B MECHANICAL MODE
STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP PLAY STOP FF STOP REW STOP
DECK B MECHANICAL CONTROL
B SOL 1 (40)
B SOL 2 (39)
DECK A MECHANICAL CONTROL
A SOL 1 (38)
A SOL 2 (37)
SIGNAL ROUTES & MUTING CONTROL
A MUTE (36)
B MUTE (35)
REC / P.B (34)
BIAS (33)
MS (13)
INDICATION CONTROL
REC IND (12)
SIGNAL ROUTES & MUTING CONTROL
COPY (11)
LINE MUTE (10)
REC MUTE (9)
H
L
T1
T2
T3
T4

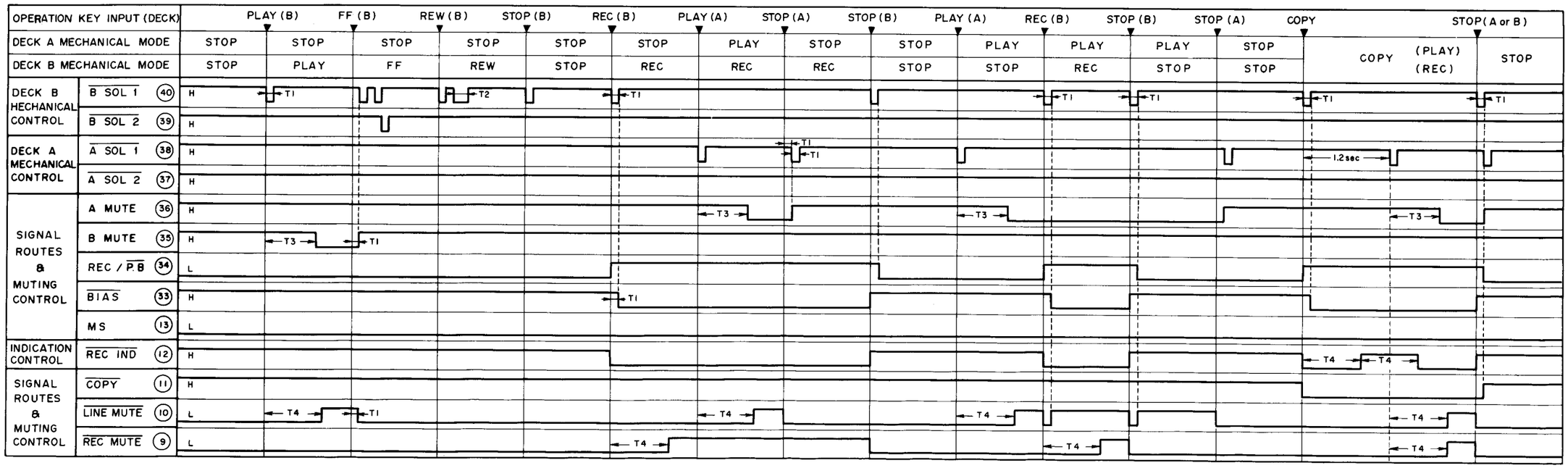
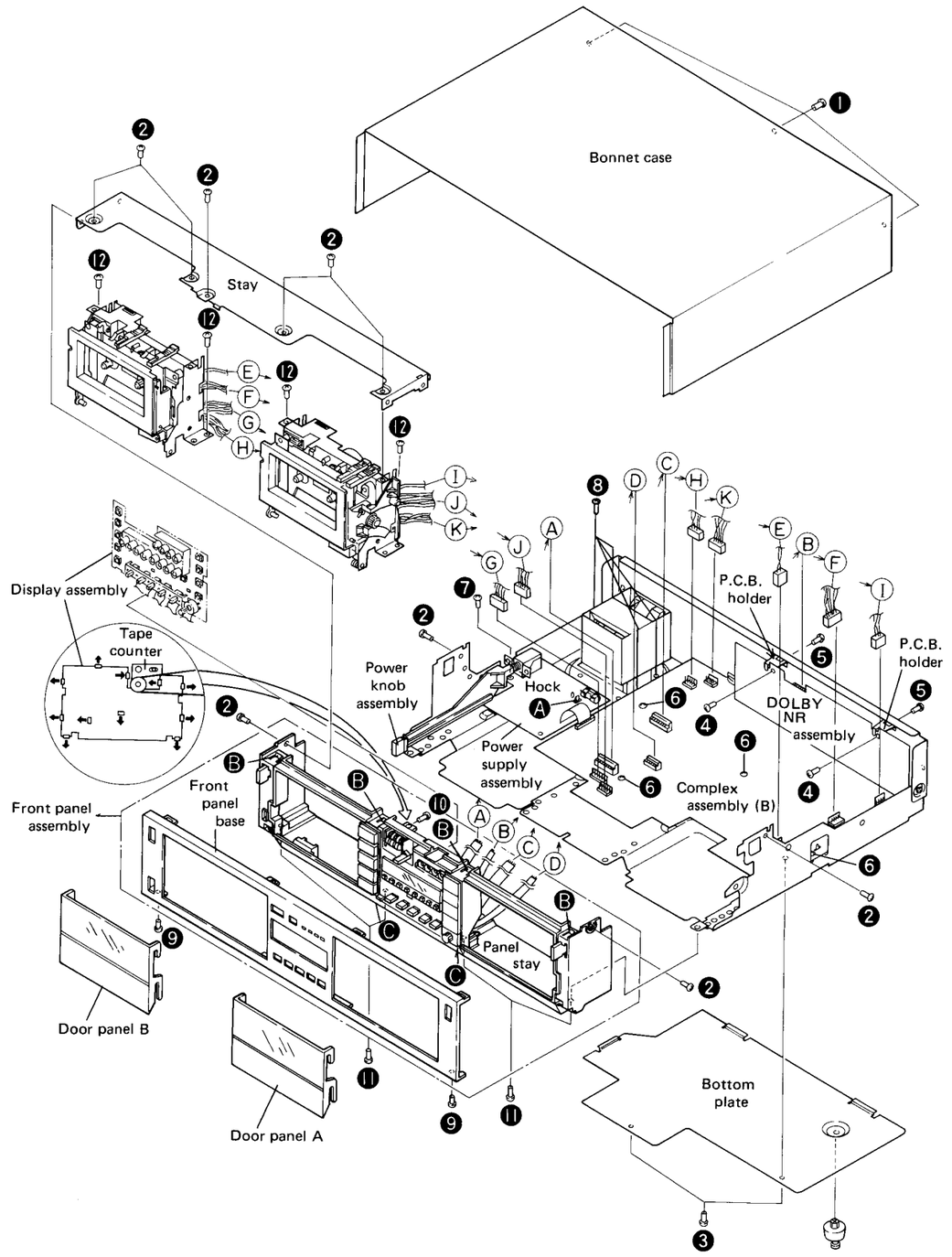

OPERATION KEY INPUT (DECK)
PLAY (B) FF (B) REW (B) STOP (B) REC (B) PLAY (A) STOP (A) STOP (B) PLAY (A) REC (B) STOP (B) STOP (A) COPY STOP (A or B)
DECK A MECHANICAL MODE
STOP STOP STOP STOP STOP STOP PLAY STOP STOP PLAY PLAY PLAY STOP COPY (PLAY) (REC) STOP
DECK B MECHANICAL MODE
STOP PLAY FF REW STOP REC REC REC STOP STOP REC STOP STOP
DECK B MECHANICAL CONTROL
B SOL 1 (40)
B SOL 2 (39)
DECK A MECHANICAL CONTROL
A SOL 1 (38)
A SOL 2 (37)
SIGNAL ROUTES & MUTING CONTROL
A MUTE (36)
B MUTE (35)
REC / P.B (34)
BIAS (33)
MS (13)
INDICATION CONTROL
REC IND (12)
SIGNAL ROUTES & MUTING CONTROL
COPY (11)
LINE MUTE (10)
REC MUTE (9)
H
L
T1
T2
T3
T4
1.2sec

Fig. 4-15 Timing Chart

5. DISASSEMBLY



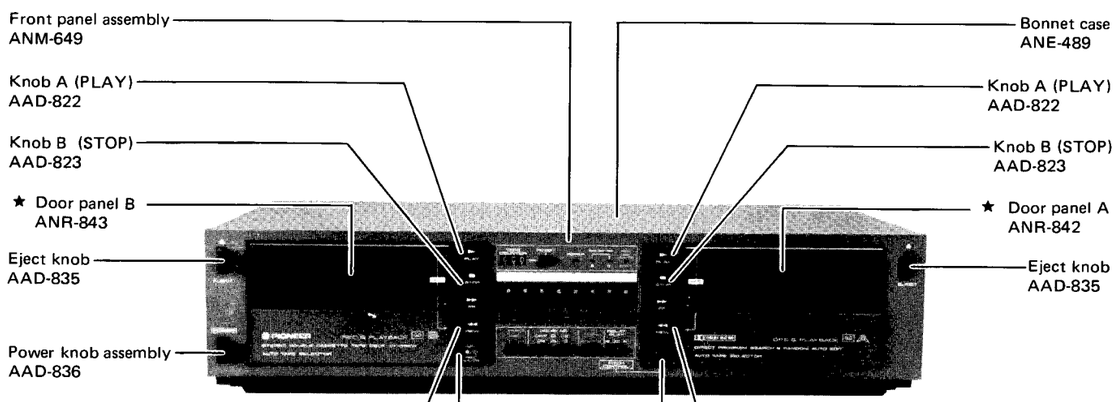
- **Disassembly**
  1) Undo screw ❶ to remove the bonnet case.
  2) Remove screw ❷ to dismount the stay.
  3) For the removal of the bottom plate, remove screw ❸ on the bottom of the set. This allows the soldering on the composite assembly (B) to come into view.
  4) Removing rivet ❹ and screw ❺ on the rear panel causes the P.C.B. holder to be unfastened, enabling DOLBY|NR assembly to be detachable.
  5) The complex assembly (B) can be dismounted by removing screw ❻ .
  6) Removing screw ❼ as well as hook Ⓐ on PB support permits the power supply assembly to be dismounted. Then, the power knob assembly can be removed from the power supply assembly.
  7) When the power supply assembly is removed, the transistor assembly comes into view. Remove screws to dismount the transistor assembly.
  8) Undo screw ❽ on its lower portion to remove the transformer.
  9) For the removal of door panels A and B, slide the panels upward with the doors kept open.
  10) To remove the front panel base, undo screw ❾ , and slightly lower the panel stayhook Ⓑ (upper four portions) and hook Ⓒ (lower two portions) using a flat screwdriver, etc.
  11) The tape counter is removed by removing screw ❿ .
  12) The panel stay is removed by removing screw ⓫ .
  13) The display assembly is removed by removing the panel stay hook (without having to remove the front panel assembly).
  14) The push and PC knobs are detachable from the display assembly when the latter is removed.
  15) The eject knob is removed by removing the hook on the back of the panel stay.
  16) Remove screw ⓬ to dismount the cassette mechanism unit (the removal of the power knob assembly enables the mechanism unit to be dismounted without requiring the front panel assembly to be removed).

6. PARTS LOCATION

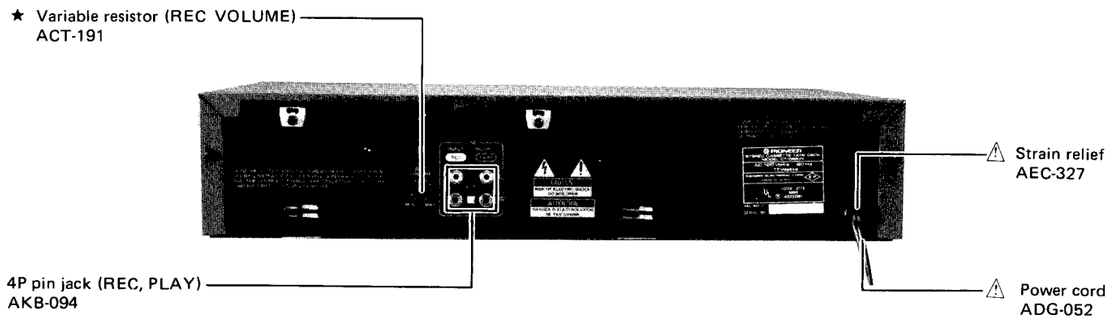
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

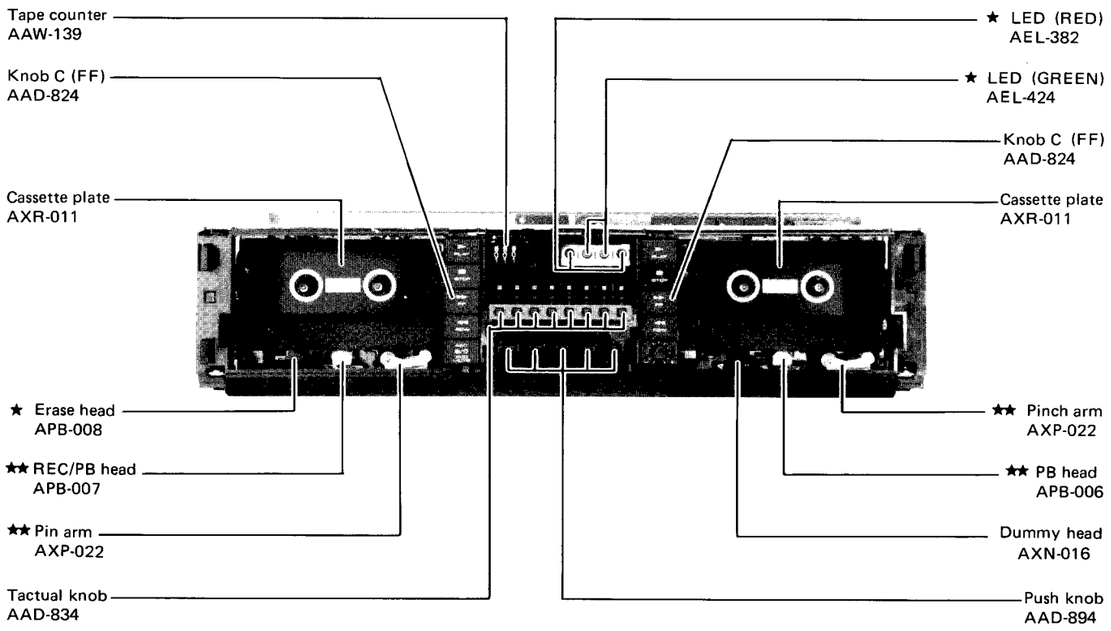
Front Panel View



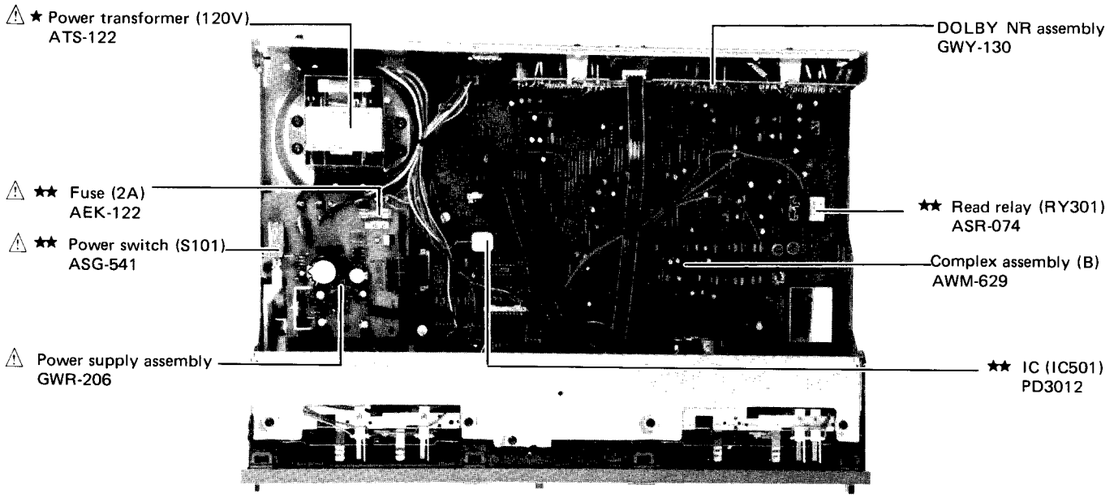
Rear Panel View



Front View with Panel Remoted

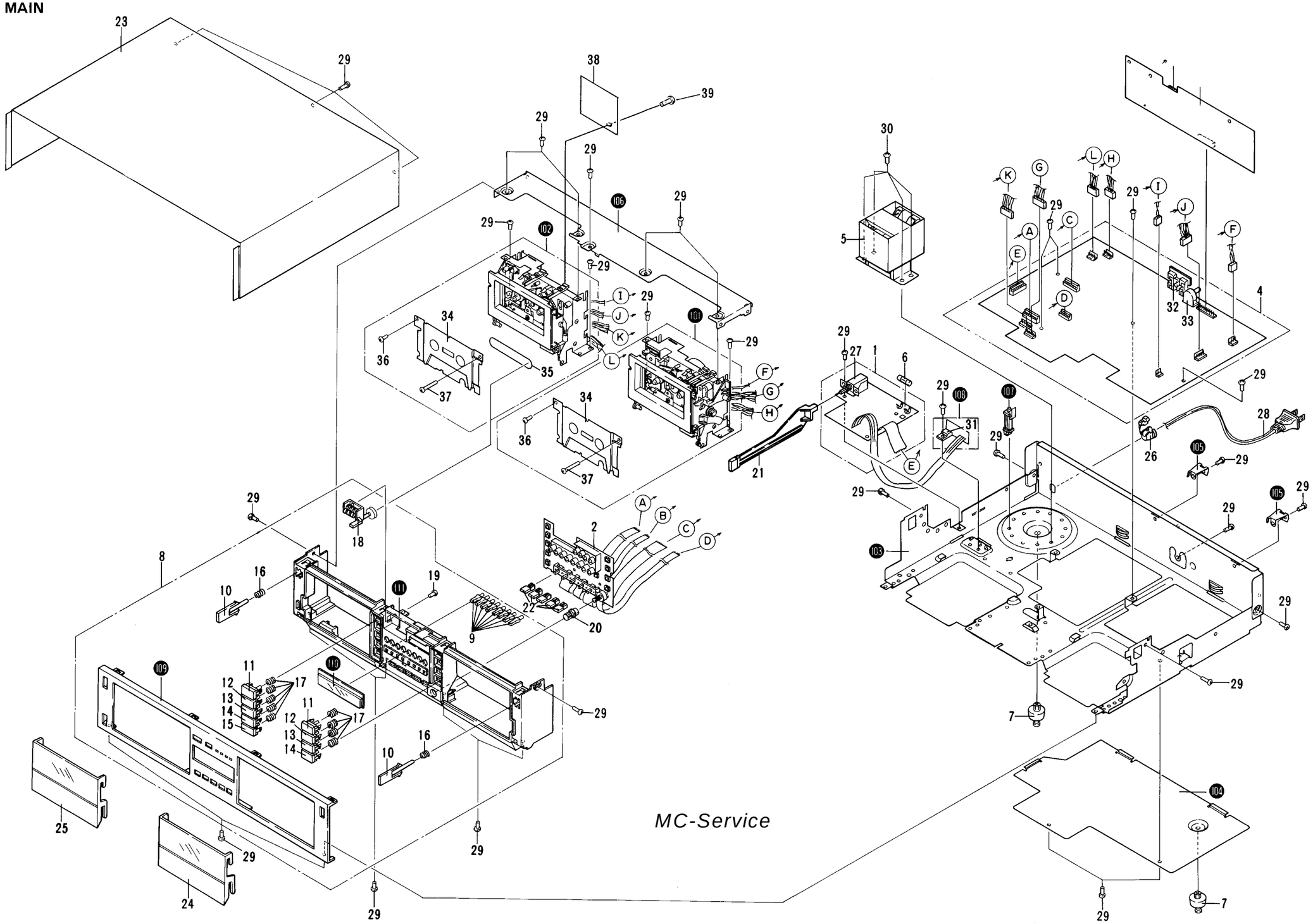


Top View



7. EXPLODED VIEW AND PARTS LIST

7.1 MAIN



MC-Service

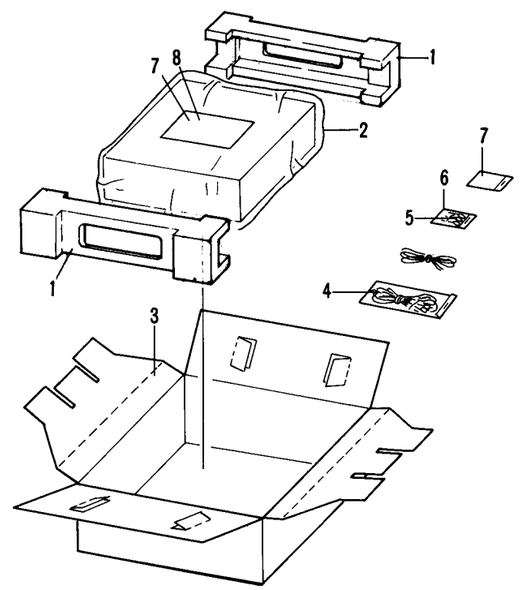
Parts List of Main

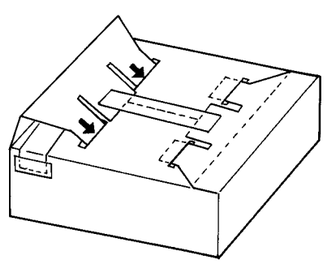
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ *GENERALLY MOVES FASTER THAN* ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Mark	No.	Part No.	Description
	1	GWR-206	Power supply assembly
	2	GWY-129	Display assembly
	3	GWY-130	DOLBY NR assembly
	4	AWM-629	Composit assembly (B)
⚠ ★	5	ATS-122	Power transformer (120V)
⚠ ★★	6	AEK-122	Fuse (2A)
	7	AEC-784	Foot assembly
	8	ANM-649	Front panel assembly
	9	AAD-834	Tactual knob
	10	AAD-835	Eject knob
	11	AAD-822	Knob A (PLAY)
	12	AAD-823	Knob B (STOP)
	13	AAD-824	Knob C (FF)
	14	AAD-825	Knob D (REW)
	15	AAD-826	Knob E (REC/REC MUTE)
	16	ABH-136	Spring
	17	ABH-112	Spring
	18	AAW-139	Tape counter
	19	PBZ26P060FMC	Screw
	20	AAB-372	Rotary knob (PITCH CONTROL)
	21	AAD-836	Power knob assembly
	22	AAD-894	Push knob
	23	ANE-489	Bonnet case
★	24	ANR-842	Door panel A
★	25	ANR-843	Door panel B
⚠	26	AEC-327	Strain relief
⚠ ★★	27	ASG-541	Push switch (POWER, S101)
⚠	28	ADG-052	Power cord
	29	BBZ30P080FZK	Screw
	30	VBZ40P060FMC	Screw
★★	31	2SD1406	Transistor (Q401)
	32	AKB-094	4P pin jack (REC, PLAY)
★	33	ACT-191	Variable resistor (REC VOLUME, VR107)
	34	AXR-011	Cassette plate
★★	35	AXW-008	Counter belt
	36	BBZ30P050FMC	Screw
	37	BCZ20P120FMC	Screw
	38	AWP-019	Control assembly
	39	ATZ26P080FMC	Screw
	101		Mechanism unit (Deck A)
	102		Mechanism unit (Deck B)
	103		Main chassis
	104		Bottom plate
	105		PCB holder
	106		Stay
	107		PB supporter
	108		Transistor assembly
	109		Front panel base
	110		Indicator panel
	111		Front panel stay

7.2 PACKING

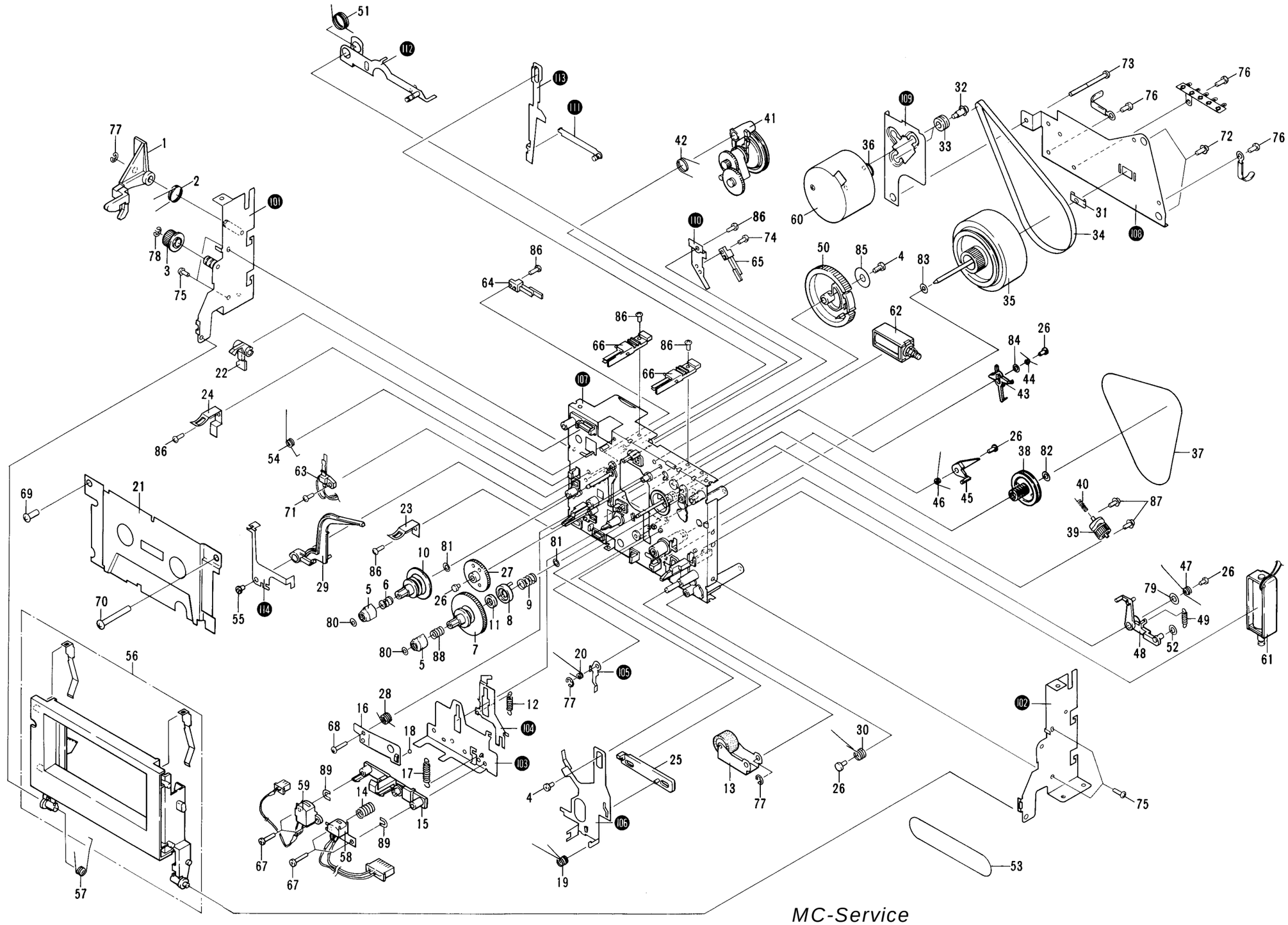




Parts List of Packing

Mark	No.	Part No.	Description
	1	AHA-379	Pad
	2	AHG-182	Bag
	3	AHE-348	Packing case
	4	ADE-074	Cord
	5	AEX-016	Head cleaner
	6	AHG-169	Bag
	7	AHG-117	Bag
	8	ARB-610	Operating instruction

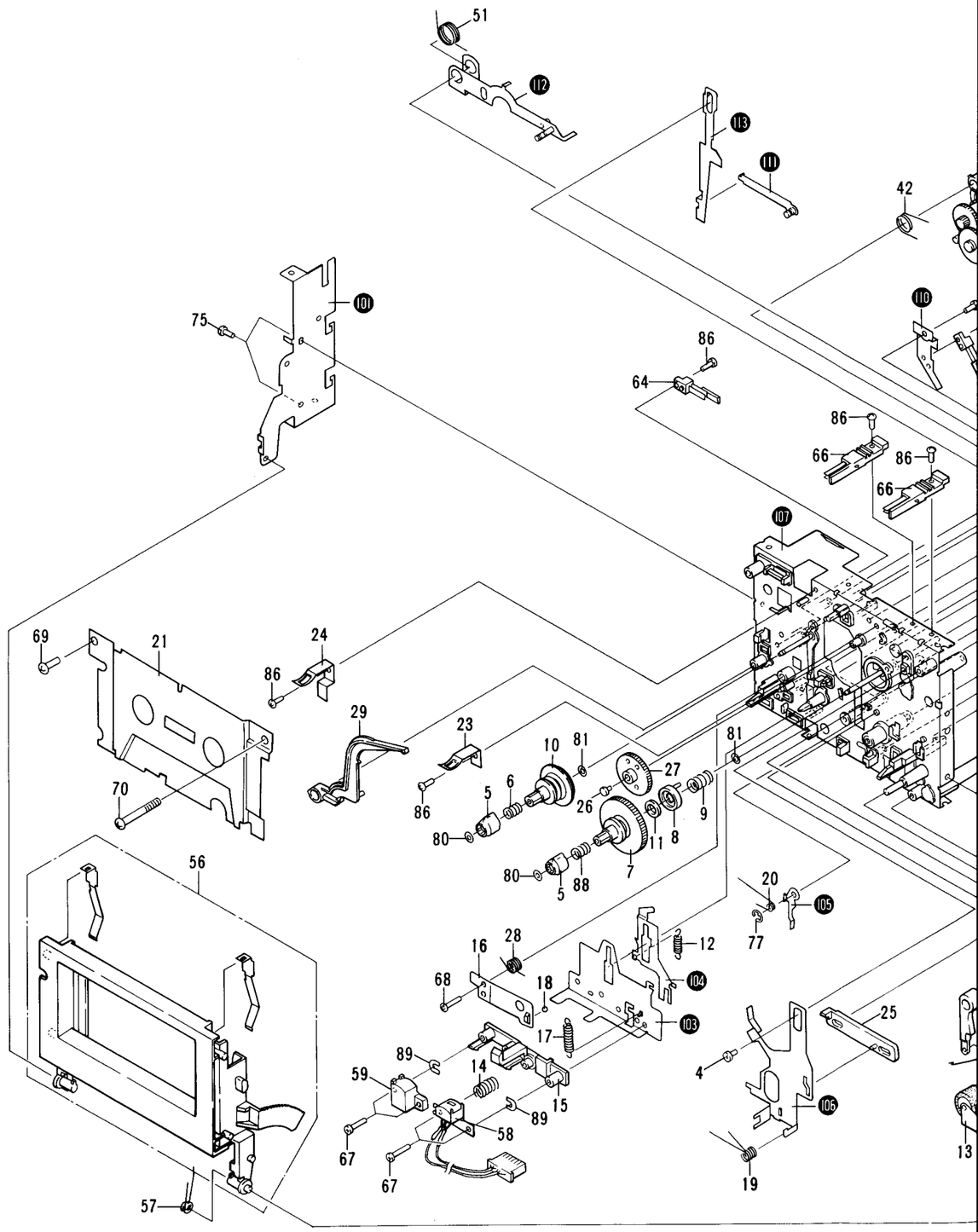
7.3 MECHANISM ASSEMBLY (DECK B)

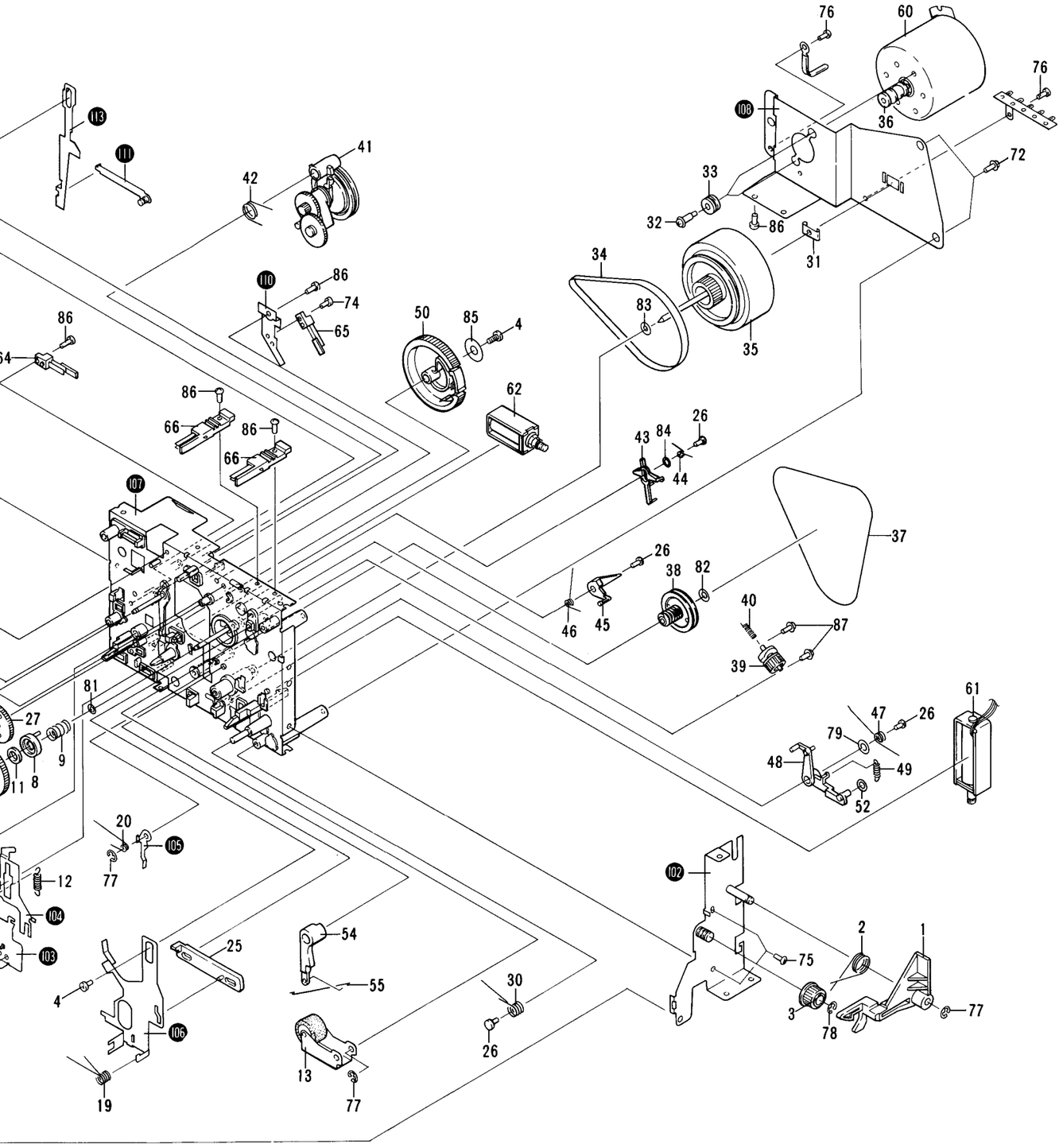


7.4 MECHANISM ASSEMBLY (DECK A)

Parts List of Mechanism Assembly (Deck B)

Mark	No.	Part No.	Description
	1	AXS-055	Eject lever
	2	AXV-060	Spring
	3	AXS-056	Gear
	4	AXT-007	Bush
	5	AXS-057	Reel pawl
	6	AXV-061	Spring
	7	AXP-020	Take-up reel base
	8	AXS-058	Clutch plate
	9	AXV-062	Spring
	10	AXP-021	Supply reel base
	11	AXW-023	Plate
	12	AXV-063	Spring
★★	13	AXP-022	Pinch arm
	14	AXV-064	Spring
	15	AXS-059	Head stand
	16	AXR-008	Stopper plate
	17	AXV-065	Spring
	18	AXT-008	Steel ball
	19	AXV-066	Spring
	20	AXV-067	Spring
	21	AXR-011	Cassette plate
	22	AXS-060	REC arm
	23	AXV-068	Spring
	24	AXV-069	Spring
	25	AXS-061	Head stopper
	26	AXS-062	Bush
	27	AXS-063	Idler gear
	28	AXV-070	Spring
	29	AXS-064	Brake arm
	30	AXV-071	Spring
	31	AXV-081	Thrust plate
	32	AXT-009	Screw
	33	AXW-024	Shock mount
★	34	AXW-025	Capstan belt
	35	AXP-024	Flywheel assembly
	36	AXS-065	Motor pulley
★	37	AXW-026	Belt
	38	AXS-066	Worm
	39	AXS-067	AS cam
	40	AXV-072	Spring
	41	AXP-025	Drive arm assembly
	42	AXV-073	Spring
	43	AXS-068	Sensor
	44	AXV-074	Spring
	45	AXS-069	Sensor arm
	46	AXV-075	Spring
	47	AXV-076	Spring
	48	AXS-070	Trigger arm
	49	AXV-077	Spring
	50	AXS-071	Cam gear
	51	AXV-078	Spring
	52	AXW-007	O ring
★	53	AXW-008	Counter belt
	54	AXV-079	Spring
	55	AXS-072	Reel receptacle B
	56	AXP-028	Cassette case assembly
	57	AXV-080	Spring
★★	58	APB-007	REC/PB head
★	59	APB-008	Erase head
★★	60	AXN-023	Motor
△ ★	61	AXN-017	Solenoid 1
△ ★	62	AXN-018	Solenoid 2
★★	63	AXN-022	Leaf switch
★★	64	AXN-019	Leaf switch
★★	65	AXN-020	Leaf switch
★★	66	AXN-021	Leaf switch
	67	BMZ20Y120FMC	Screw
	68	PCZ26P100FMC	Screw
	69	BBZ20P050FMC	Screw
	70	BCZ20P120FMC	Screw
	71	PCZ20P050FMC	Screw
	72	BBZ26P080FMC	Screw
	73	PCZ26P320FMC	Screw
	74	PCZ20P060FMC	Screw
	75	PCZ26P040FMC	Screw
	76	BCZ26P050FMC	Screw
	77	YE25FMC	Washer E-type
	78	YE30FMC	Washer E-type
	79	WA35M070W020	Washer
	80	WA16D050D020	Washer
	81	WA21D040D013	Washer
	82	WA21M070W030	Washer
	83	WA26D047D013	Washer
	84	WA30D050D020	Washer
	85	WA21M120W025	Washer
	86	PCZ26P050FMC	Screw
	87	DTZ26P060FMC	Screw
	88	AXV-085	Spring
	89	AXR-021	Spacer (0.1t)
		(AXR-022)	Spacer (0.2t)
	101		Side plate L
	102		Side plate R
	103		Head base
	104		FR lever
	105		Select arm
	106		PLAY lever
	107		Chassis
	108		Flywheel cover
	109		Motor plate
	110		Plate B
	111		Joint plate
	112		Cam lever
	113		FF lever
	114		Eject stopper

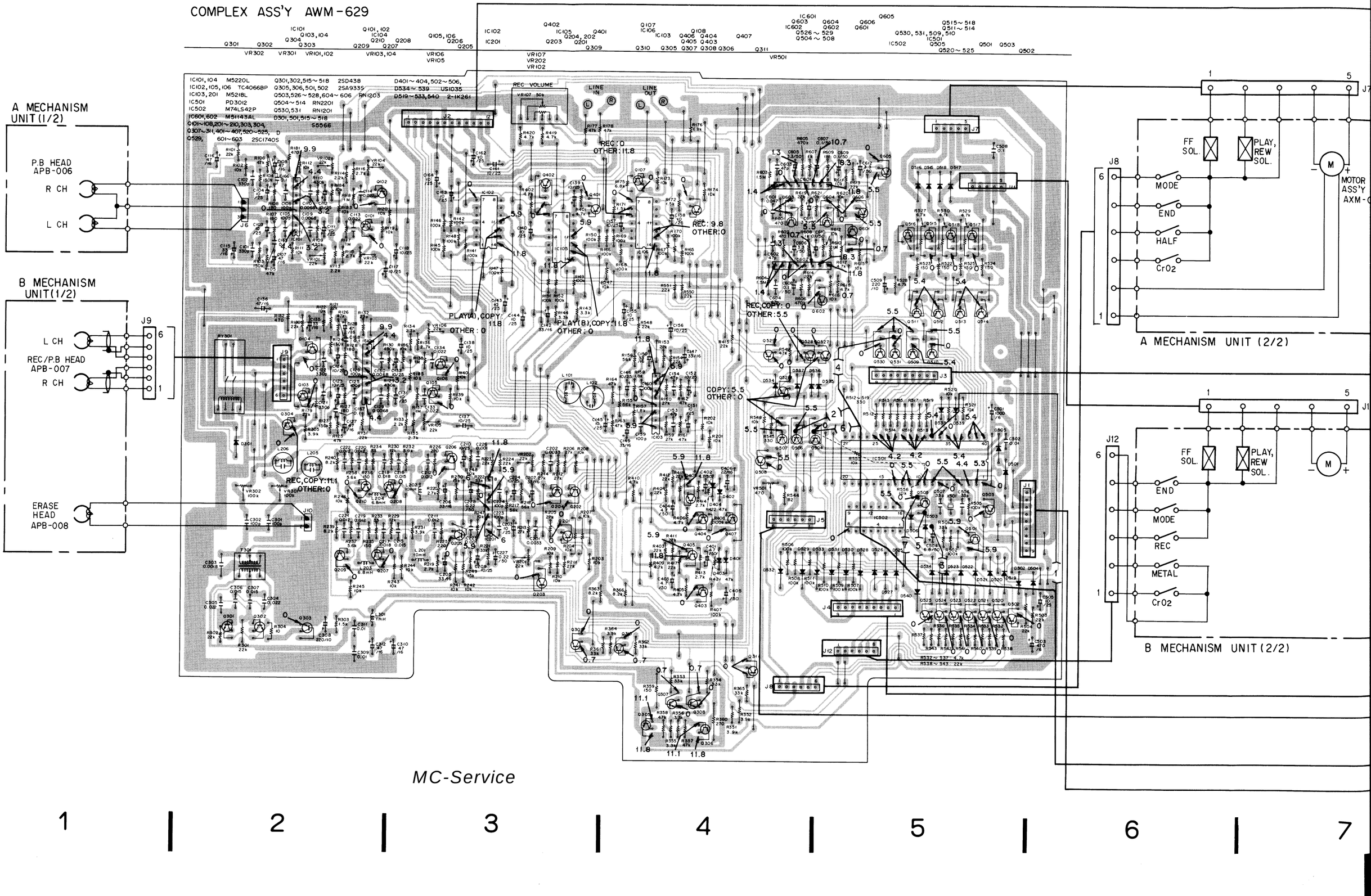


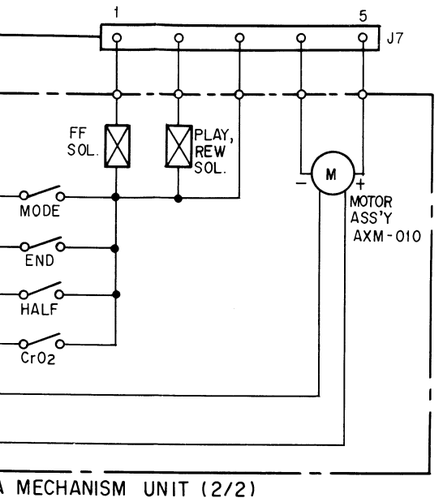


Parts List of Mechanism Assembly (Deck A)

Mark	No.	Part No.	Description
A	1	AXS-075	Eject lever
	2	AXV-082	Spring
	3	AXS-056	Gear
	4	AXT-007	Bush
	5	AXS-057	Reel pawl
	6	AXV-061	Spring
	7	AXP-020	Take-up reel base
	8	AXS-058	Clutch plate
	9	AXV-062	Spring
—	10	AXP-021	Supply reel base
	11	AXW-023	Plate
	12	AXV-063	Spring
	13	AXP-022	Pinch arm
	14	AXV-064	Spring
	15	AXS-059	Head stand
B	16	AXR-008	Stopper plate
	17	AXV-065	Spring
	18	AXT-008	Steel ball
	19	AXV-066	Spring
	20	AXV-067	Spring
	21	AXR-011	Cassette plate
	22	.....	
	23	AXV-068	Spring
	24	AXV-069	Spring
—	25	AXS-061	Head stopper
	26	AXS-062	Bush
	27	AXS-063	Idler gear
	28	AXV-070	Spring
	29	AXS-064	Brake arm
	30	AXV-071	Spring
C	31	AXV-081	Thrust plate
	32	AXT-009	Screw
	33	AXW-024	Shock mount
★	34	AXW-029	Capstan belt
	35	AXP-024	Flywheel assembly
	36	AXS-073	Motor pulley
★	37	AXW-030	Belt
	38	AXS-066	Worm
	39	AXS-067	AS cam
—	40	AXV-072	Spring
	41	AXP-025	Drive arm assembly
	42	AXV-083	Spring
	43	AXS-068	Sensor
	44	AXV-074	Spring
	45	AXS-069	Sensor arm
D	46	AXV-075	Spring
	47	AXV-076	Spring
	48	AXS-070	Trigger arm
	49	AXV-077	Spring
	50	AXS-071	Cam gear
	51	AXV-078	Spring
	52	AXW-007	O ring
	53	.....	
	54	AXS-074	Eject stopper
	55	AXV-083	Joint rod
	56	AXP-030	Cassette case assembly
	57	AXV-084	Spring
★★	58	APB-006	PB head
	59	AXN-016	Dummy head
★★	60	AXM-010	Motor
⚠ ★	61	AXN-017	Solenoid 1
⚠ ★	62	AXN-018	Solenoid 2
	63	.....	
★★	64	AXN-019	Leaf switch
★★	65	AXN-020	Leaf switch
★★	66	AXN-021	Leaf switch
	67	BMZ20Y120FMC	Screw
	68	PCZ26P100FMC	Screw
	69	BBZ20P050FMC	Screw
	70	BCZ20P120FMC	Screw
	71	.....	
	72	BBZ26P080FMC	Screw
	73	.....	
	74	PCZ20P060FMC	Screw
	75	PCZ26P040FMC	Screw
	76	BCZ26P050FMC	Screw
	77	YE25FMC	Washer E-type
	78	YE30FMC	Washer E-type
	79	WA35M070W020	Washer
	80	WA16D050D020	Washer
	81	WA21D040D013	Washer
	82	WA21M070W030	Washer
	83	WA26D047D013	Washer
	84	WA30D050D020	Washer
	85	WA21M120W025	Washer
	86	PCZ26P050FMC	Screw
	87	DTZ26P060FMC	Screw
	88	AXV-085	Spring
	89	AXR-021	Spacer (0.1t)
		(AXR-022)	Spacer (0.2t)
	101		Side plate L
	102		Side plate R
	103		Head base
	104		FR lever
	105		Select arm
	106		PLAY lever
	107		Chassis
	108		Flywheel cover
	109		.....
	110		Plate B
	111		Joint plate
	112		Cam lever
	113		FF lever

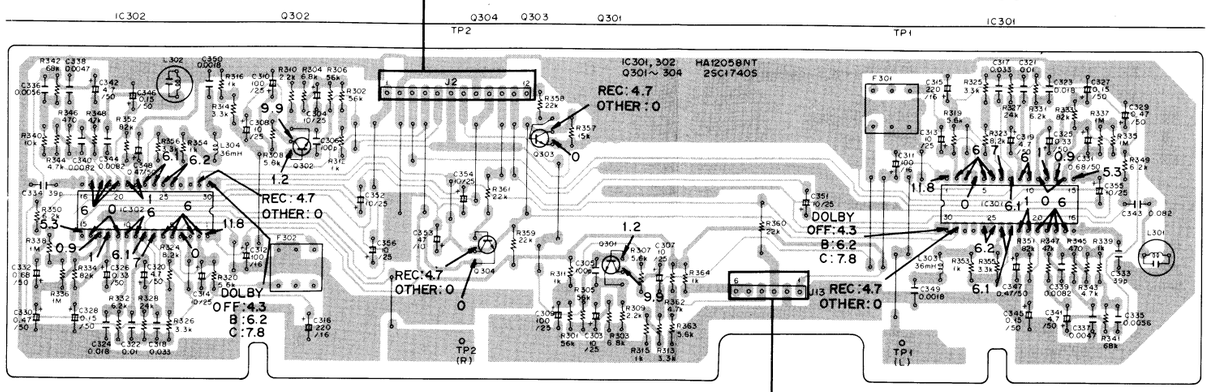
8. P.C.BOARDS CONNECTION DIAGRAM

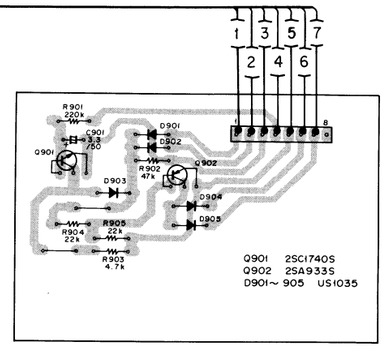




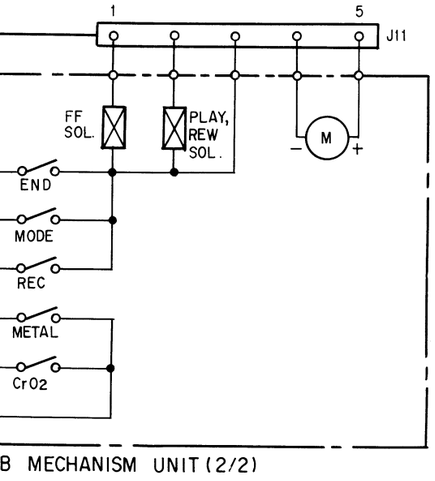
A MECHANISM UNIT (2/2)

DOLBY NR ASS'Y GWY-130

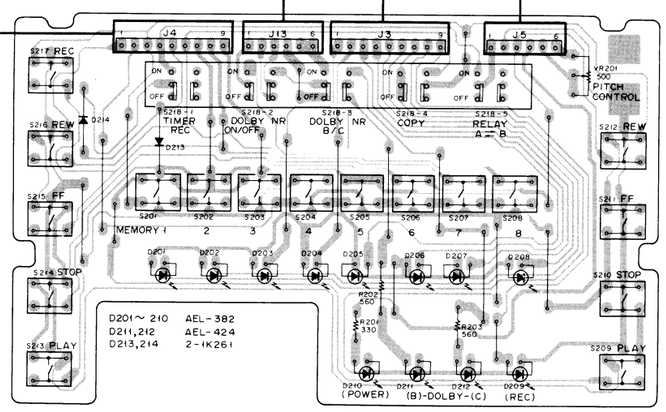




CONTROL ASS'Y
AWP-019

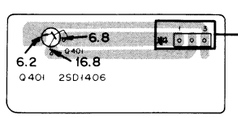


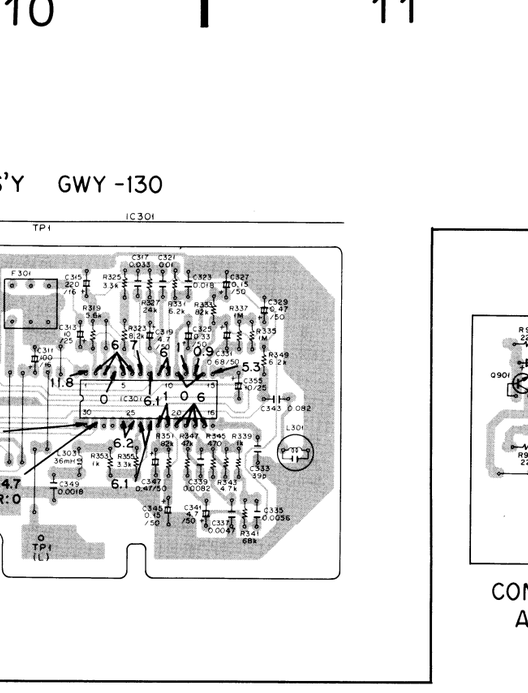
B MECHANISM UNIT (2/2)



DISPLAY ASS'Y
GWY-129

TRANSISTOR ASS'Y



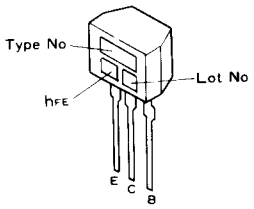


POWER SUPPLY ASS'Y
GWR-206

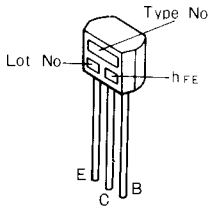
MC-Service

External Appearance of Transistors and ICs

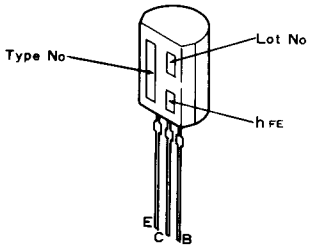
2SA933S
2SC1740S



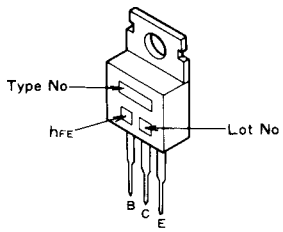
2SA1115
2SC2603



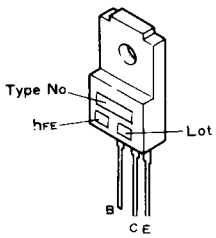
2SD438



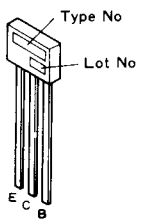
2SD836A



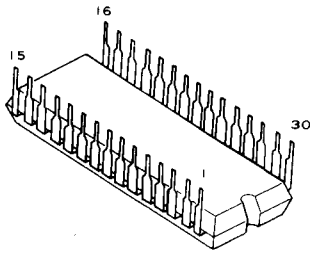
2SD1406



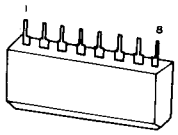
RN1201
RN1203
RN2201



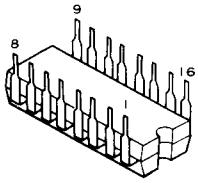
HA12058NT



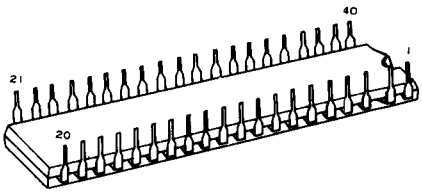
M5218L
M5220L
M51143AL



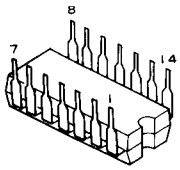
M74LS42P



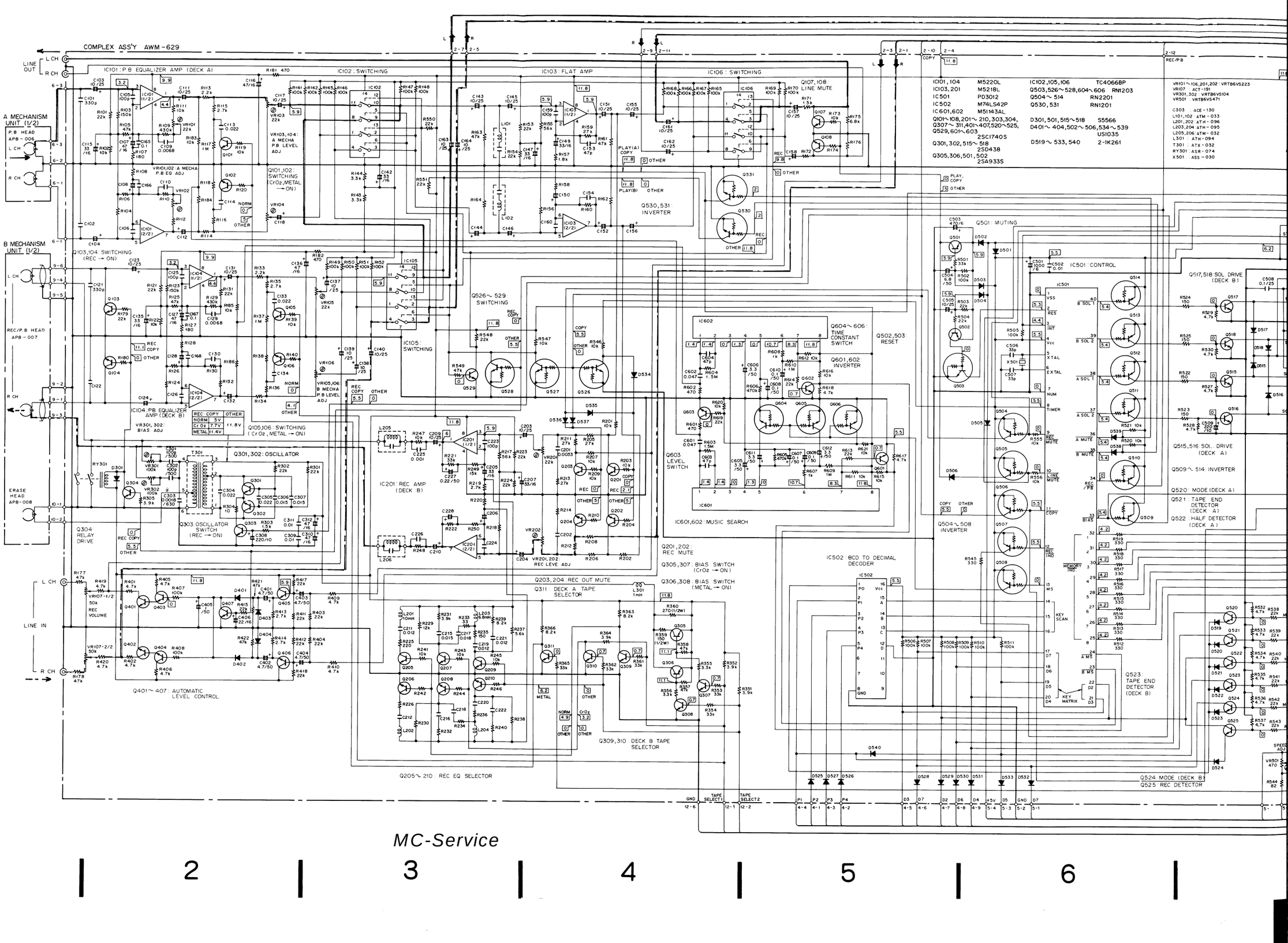
PD3012



TC4066BP



9. SCHEMATIC DIAGRAM


COMPLEX ASS'Y AWM-629
LINE OUT
L CH
R CH
IC101 : P.B EQUALIZER AMP (DECK A)
IC102 : SWITCHING
IC103 : FLAT AMP
IC106 : SWITCHING
A MECHANISM UNIT (1/2)
P.B HEAD APB-006
VR103, 104 : A MECHA P.B LEVEL ADJ
VR101, 102 : A MECHA P.B EQ ADJ
Q101, 102 : SWITCHING (CrO2, METAL → ON)
Q107, 108 : LINE MUTE
Q530, 531 INVERTER
PLAY(A) COPY
PLAY(B)
OTHER
REC
B MECHANISM UNIT (1/2)
Q103, 104 : SWITCHING (REC → ON)
REC/P.B HEAD APB-007
IC104 : PB EQUALIZER AMP (DECK B)
VR301, 302 : BIAS ADJ
REC COPY OTHER
NORM 5V
CrO2 7.7V
METAL 11.4V
11.8V
Q105, 106 : SWITCHING (CrO2, METAL → ON)
VR105, 106 : B MECHA P.B LEVEL ADJ
Q526 ~ 529 SWITCHING
IC105 : SWITCHING
Q301, 302 : OSCILLATOR
ERASE HEAD APB-008
Q303 : OSCILLATOR SWITCH (REC → ON)
Q304 RELAY DRIVE
IC201 : REC AMP (DECK B)
VR201, 202 : REC LEVE ADJ
Q203, 204 : REC OUT MUTE
Q311 : DECK A TAPE SELECTOR
Q309, 310 : DECK B TAPE SELECTOR
Q205 ~ 210 : REC EQ SELECTOR
Q201, 202 : REC MUTE
Q305, 307 : BIAS SWITCH (CrO2 → ON)
Q306, 308 : BIAS SWITCH (METAL → ON)
LINE IN
VR107-1/2 50k REC VOLUME
Q401 ~ 407 : AUTOMATIC LEVEL CONTROL
IC602
Q604 ~ 606 : TIME CONSTANT SWITCH
Q601, 602 : INVERTER
Q502, 503 : RESET
Q603 LEVEL SWITCH
IC601, 602 : MUSIC SEARCH
IC502 : BCD TO DECIMAL DECODER
Q501 : MUTING
IC501 : CONTROL
Q517, 518 : SOL DRIVE (DECK B)
Q515, 516 : SOL DRIVE (DECK A)
Q509 ~ 514 : INVERTER
Q520 : MODE (DECK A)
Q521 : TAPE END DETECTOR (DECK A)
Q522 : HALF DETECTOR (DECK A)
Q504 ~ 508 : INVERTER
Q523 : TAPE END DETECTOR (DECK B)
Q524 : MODE (DECK B)
Q525 : REC DETECTOR
IC101, 104 M5220L
IC103, 201 M5218L
IC 501 PD3012
IC 502 M74LS42P
IC 601, 602 M51143AL
Q101 ~ 108, 201 ~ 210, 303, 304, Q307 ~ 311, 401 ~ 407, 520 ~ 525, Q529, 601 ~ 603 2SC1740S
Q301, 302, 515 ~ 518 2SD438
Q305, 306, 501, 502 2SA933S
IC102, 105, 106 TC4066BP
Q503, 526 ~ 528, 604 ~ 606 RN1203
Q504 ~ 514 RN2201
Q530, 531 RN1201
D301, 501, 515 ~ 518 S5566
D401 ~ 404, 502 ~ 506, 534 ~ 539 US1035
D519 ~ 533, 540 2-1K261
VR101 ~ 106, 201, 202 : VRTB6VS223
VR107 ACT-191
VR301, 302 : VRTB6VS104
VR501 : VRTB6VS471
Q303 ACE-130
L101, 102 ATM-033
L201, 202 ATM-096
L203, 204 ATM-095
L205, 206 ATM-032
L301 : ATM-094
T301 : ATX-032
RY301 : ASR-074
X501 : ASS-030
GND
TAPE SELECT1
TAPE SELECT2
+5V
SPEED ADJ

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

1. RESISTORS.
Indicated in Ω, ¼W, ½ W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K), ±10%, (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT.
⎓: DC voltage (V) at no input signal

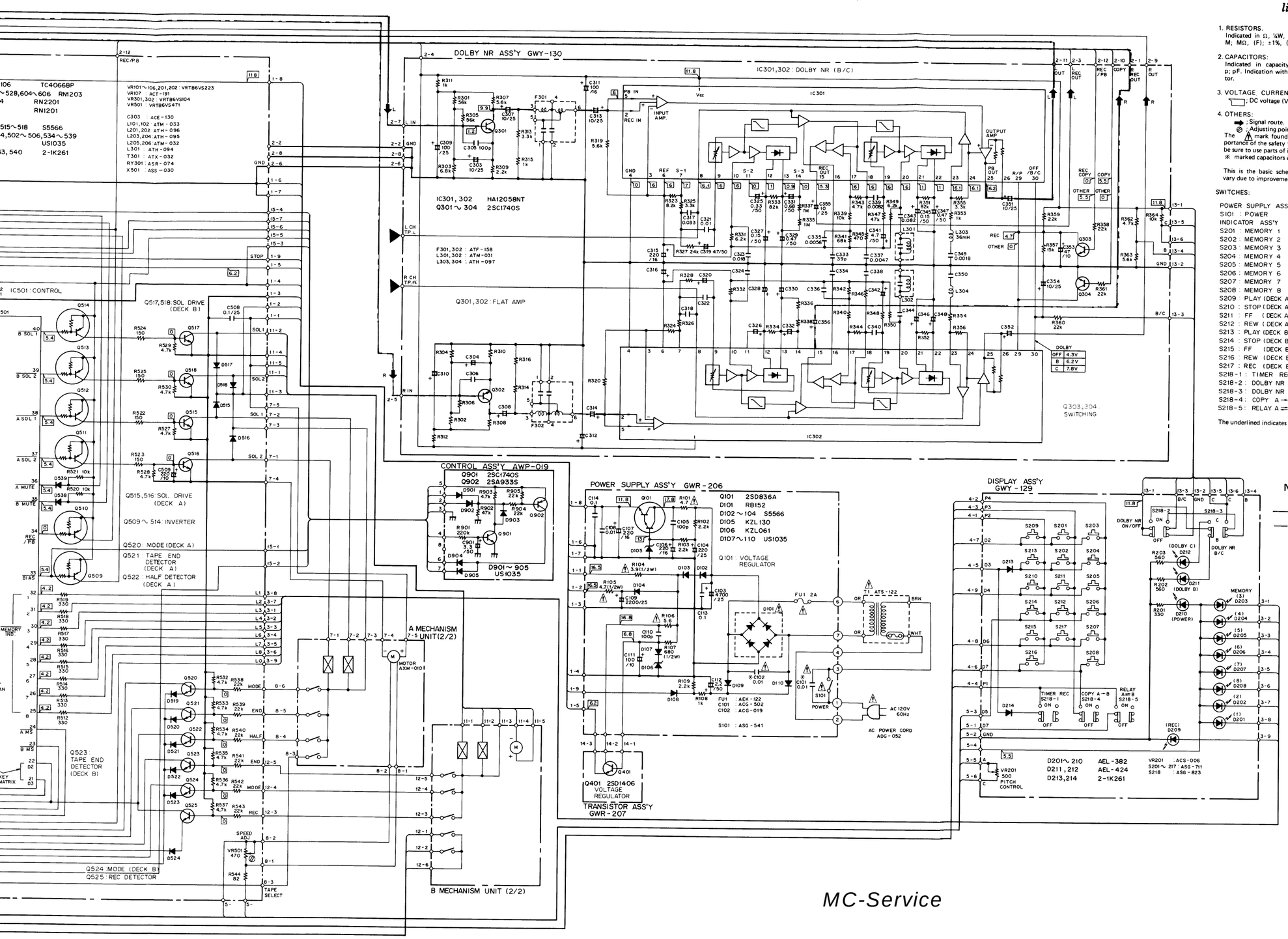
4. OTHERS:
➡: Signal route.
⊘: Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

POWER SUPPLY ASS'Y
S101 : POWER ON – OFF
INDICATOR ASS'Y
S201 : MEMORY 1 ON – OFF
S202 : MEMORY 2 ON – OFF
S203 : MEMORY 3 ON – OFF
S204 : MEMORY 4 ON – OFF
S205 : MEMORY 5 ON – OFF
S206 : MEMORY 6 ON – OFF
S207 : MEMORY 7 ON – OFF
S208 : MEMORY 8 ON – OFF
S209 : PLAY (DECK A) ON – OFF
S210 : STOP (DECK A) ON – OFF
S211 : FF (DECK A) ON – OFF
S212 : REW (DECK A) ON – OFF
S213 : PLAY (DECK B) ON – OFF
S214 : STOP (DECK B) ON – OFF
S215 : FF (DECK B) ON – OFF
S216 : REW (DECK B) ON – OFF
S217 : REC (DECK B) ON – OFF
S218-1 : TIMER REC ON – OFF
S218-2 : DOLBY NR ON/OFF ON – OFF
S218-3 : DOLBY NR B/C B – C
S218-4 : COPY A→B ON – OFF
S218-5 : RELAY A⇄B ON – OFF

The underlined indicates the switch position.



Note:
——— Playback signal route (Deck A: PLAY, Deck B:STOP)
–·–·– Signal route (Deck A: STOP, Deck B: REC)
▲ Measurement point

MC-Service

10. ELECTRICAL PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
  560Ω 56 x 10¹ 561 . . . . . RD¼PS 5 6 1 J
  47kΩ 47 x 10³ 473 . . . . . RD¼PS 4 7 3 J
  0.5Ω 0R5 . . . . . RN2H 0 R 5 K
  1Ω 010 . . . . . RS1P 0 1 0 K
  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
  5.62kΩ 562 x 10¹ 5621. . . . . RN¼SR 5 6 2 1 F
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Miscellaneous Parts List

Mark	Symbol & Description	Part No.
	Complex assembly (B)	AWM-629
	DOLBY NR assembly	GWY-130
	Display assembly	GWY-129
	Power supply assembly	GWR-206
	Transistor assembly	
	Control assembly	AWP-019
⚠ ★	Power transformer (120V)	ATS-122
⚠ ★★	FU1 Fuse (2A)	AEK-122

Complex Assembly (B) (AWM-629)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC601, IC602	M51143AL
★★	IC103, IC201	M5218L
★★	IC101, IC104	M5220L
★★	IC502	M74LS42P
★★	IC501	PD3012
★★	IC102, IC105, IC106	TC4066BP
★★	Q503, Q526 – Q528, Q604 – Q606	RN1203
★★	Q504 – Q514	RN2201
★★	Q530, Q531	RN1201
★★	Q305, Q306, Q501, Q502	2SA933S (2SA1115)
★★	Q101 – Q108, Q201 – Q210, Q303, Q304, Q307 – Q311, Q401 – Q407, Q520 – Q525, Q529, Q601 – Q603	2SC1740S (2SC2603)
★★	Q301, Q302, Q515 – Q518	2SD438
★	D301, D501, D515 – D518	S5566
★	D401 – D404, D502 – D506, D534 – D539	US1035 (1S1555)
★	D519 – D533, D540	2-1K261

SWITCH

Mark	Symbol & Description	Part No.
★★	RY301 Read relay	ASR-074

COILS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	L301 Inductance	ATH-094
	L203, L204	ATH-095
	L201, L202 Inductance	ATH-096
	L205, L206 Trap coil	ATM-032
	L101, L102 Trap coil	ATM-033
	T301 Biass OSC transformer	ATX-032

CAPACITORS

Mark	Symbol & Description	Part No.
	C303	ACE-130
	C101, C102, C121, C122	CQSA 331J 50
	C105, C106, C125, C126, C159, C160, C223, C224	CCDSL 101J 50
	C301, C302	CCDSL 101K 500
	C506, C507	CCDSL 330J 50
	C153, C154, C603, C604	CCDSL 470J 50
	C103, C104, C123, C124	CEANL 100M 25
	C227 C228	CEA R22M 50L
	C501	CEAS 102M 6
	C607 – C610	CEA 0R1M 50L
	C405	CEA 010M 50L
	C111, C112, C117, C118, C131, C132, C137 – C140, C143 – C146, C151, C152, C155 – C158, C161 – C164, C203, C204, C209, C210, C505	CEA 100M 25L
	C406	CEA 220M 16L

Mark	Symbol & Description	Part No.
	C308, C509	CEA 221M 10L
	C605, C606, C611, C612	CEA 3R3M 50L
	C115, C135, C142, C147, C149, C150, C205 – C207	CEA 330M 16L
	C401 – C404	CEA 4R7M 50L
	C107, C108, C116, C127, C128, C136, C310, C312	CEA 470M 16L
	C504	CEA 6R8M 50L
	C503	CEA 471M 6L
	C309, C311, C502	CKDYF 103Z 50
	C508	CKDYX 104M 25
	C225, C226	CQMA 102J 50
	C211, C212, C219 – C222	CQMA 123J 50
	C215, C216, C306, C307	CQMA 153J 50
	C217, C218	CQMA 183J 50
	C113, C114, C133, C134, C304, C305	CQMA 223J 50
	C201, C202	CQMA 332J 50
	C601, C602	CQMA 473J 50
	C109, C110, C129, C130	CQMA 682J 50
	C165 – C168	CQMA 104J 50

RESISTORS

Note : When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR107 Variable resistor	ACT-191
★	VR301, VR302 Semi-fixed (100k)	VRTB6VS104
★	VR101 – VR106, VR201, VR202 Semi-fixed (22k)	VRTB6VS223
★	VR501 Semi-fixed (470)	VRTB6VS471
	R359, R360	RD1/2PM □□□J
	R181, R182, R603, R604, R560, R561	RD1/4PM □□□J
	Other resistors	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	4P pin jack	AKB-094
	X501 Ceramic resonator	ASS-030

DOLBY NR Assembly (GWY-130)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC301, IC302	HA12058NT
★★	Q301 – Q304	2SC1740S (2SC2603)

COILS AND TRANSFORMERS

Mark	Symbol & Description	Part No.
	F301, F302 DOLBY Filter	ATF-158
	L303, L304 Coil	ATH-097
	L301, L302 Trap coil	ATM-031

CAPACITORS

Mark	Symbol & Description	Part No.
	C305, C306	CCDSL 101J 50
	C333, C334	CCDSL 390J 50
	C327, C328, C345, C346	CEA R15M 50L
	C325, C326	CEA R33M 50L
	C329, C330, C347, C348	CEA R47M 50L
	C331, C332	CEA R68M 50L
	C303, C304, C307, C308, C313, C314, C351, C352	CEA 100M 25L
	C354 – C356	CEA 100M 25L
	C311, C312	CEA 101M 16L
	C315, C316	CEA 221M 16L
	C309, C310	CEA 101M 25L
	C319, C320, C341, C342	CEA 4R7M 50L
	C353	CEA 470M 10L
	C321, C322	CQMA 103J 50
	C349, C350	CQMA 182J 50
	C323, C324	CQMA 183J 50
	C317, C318	CQMA 333J 50
	C337, C338	CQMA 472J 50
	C335, C336	CQMA 562J 50
	C339, C340	CQMA 822J 50
	C343, C344	CQMA 823J 50

RESISTORS

Note : When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	12P Socket	AKP-047-A

Display Assembly (GWY-129)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D201 – D210 (RED)	AEL-382
★	D211, D212 (GREEN)	AEL-424
★	D213, D214	2-1K261

SWITCHS

Mark	Symbol & Descripton	Part No.
★★	S201 – S217 Tactual switch	ASG-711 (ASG-703)
★★	S218 Push switch	ASG-823

RESISTORS

Note : When ordering res
into code form, a

Mark	Symbol & Descript
★	VR201 Variable
	R201
	R202, R203

Power Supply Assembl

SEMICONDUCTORS

Mark	Symbol & Descripti
★★	Q101
★	D101
★	D102 – D104
★	D105
★	D106
★	D107 – D110

SWITCH

Mark	Symbol & Descript
⚠ ★★	S101 Push switc

CAPACITORS

Mark	Symbol & Descript
	C101, C102
	C103
	C104
	C105, C110
	C106, C107
	C108
	C109
	C111
	C112
	C113, C114

RESISTORS

Note : When ordering re
into code form, a

Mark	Symbol & Descript
	R101
	R102, R103
	R104, R105
	R106
	R107
	R108, R109

t No.

DSL 101J 50
DSL 390J 50
A R15M 50L
A R33M 50L
A R47M 50L

A R68M 50L
A 100M 25L

A 100M 25L
A 101M 16L

A 221M 16L
A 101M 25L
A 4R7M 50L
A 470M 10L
MA 103J 50

MA 182J 50
MA 183J 50
MA 333J 50
MA 472J 50
MA 562J 50

MA 822J 50
MA 823J 50

sistance value
art no. as before.

t No.

1/8PM □□□J

t No.

P-047-A

t No.

L-382
L-424
K261

t No.

G-711
GG-703)
G-823

RESISTORS

Note : When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR201 Variable resistor	ACS-006
	R201	RD1/8PM331J
	R202, R203	RD1/8PM561J

Power Supply Assembly (GWR-206)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q101	2SD836A
★	D101	RB152
★	D102 – D104	S5566
★	D105	KZL130
★	D106	KZL061
★	D107 – D110	US1035 (1S1555)

SWITCH

Mark	Symbol & Description	Part No.
⚠ ★★	S101 Push switch	ASG-541

CAPACITORS

Mark	Symbol & Description	Part No.
	C101, C102	ACG-019
	C103	CEAS 472M 25
	C104	CEA 221M 25L
	C105, C110	CCDSL 101J 50
	C106, C107	CEA 221M 16L
	C108	CKDYF 103Z 50
	C109	CEA 222M 25L
	C111	CEA 101M 10L
	C112	CEA 2R2M 50L
	C113, C114	CQMA104 J50

RESISTORS

Note : When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R101	RFA1/4PS4R7J
	R102, R103	RD1/4PM222J
	R104, R105	RD1/2PMFL □□□J
	R106	RFA1/4PL5R6J
	R107	RD1/2PM681J
	R108, R109	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Screw	PBZ30P060FMC

Transistor Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	Q401	2SD1406

Control Assembly (AWP-019)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q902	2SA933S
★★	Q901	2SC1740S
★	D901 – D905	US1035 (1S1555)

CAPACITOR

Mark	Symbol & Description	Part No.
	C901	CEA 3R3M 50L

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R901 – R905	RD1/8PM □□□J

11. ADJUSTMENTS

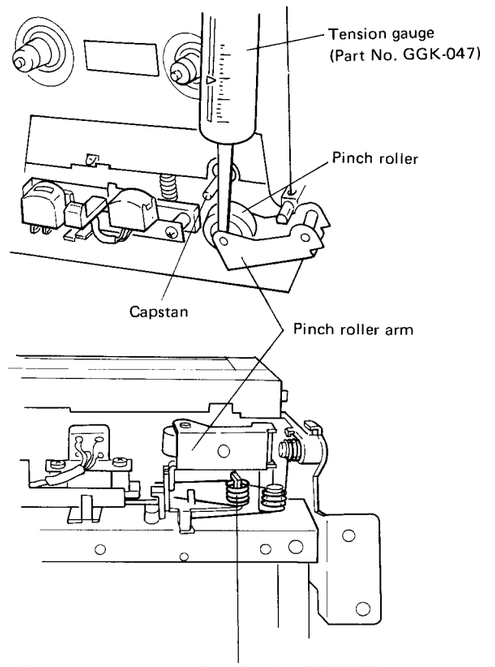
11.1 MECHANICAL ADJUSTMENTS

- Before commencing any mechanical adjustments, clean the capstan, pinch roller, idler, and belts with a cloth dipped in a little alcohol.
- Unless specifically indicated, the following adjustments refer to both deck A and B.

1. Pinch Roller Pressure Check • Use tension gauge (GGK-047)

Mode	Specifications rating	Conditions
PLAY	350 ± 100g	Let the pinch roller slowly approach the capstan, and read the tension gauge value when the pinch roller commences to rotate.

- Replace the pinch roller pressure spring (AXV-066)



2. Reel Base Torque Check • Use torque meter (GGK-056)

Mode	Take-up reel base torque ratings	Supply reel base torque ratings
PLAY	35g·cm ~ 70g·cm	*1g·cm ~ 5g·cm
FF	70g·cm ~ 140g·cm	*1g·cm ~ 5g·cm
REW	*1g·cm ~ 5g·cm	70g·cm ~ 140g·cm

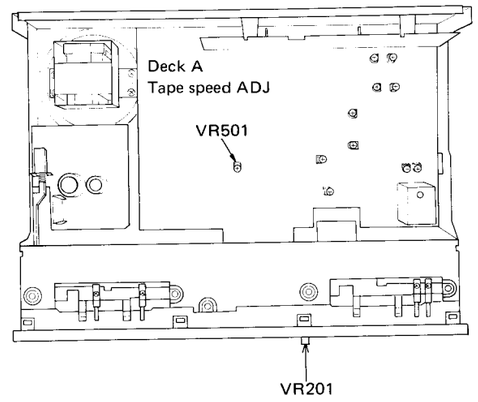
*Back-tension torque

- If the specified torque ratings are not satisfied,
  replace the supply reel base ass'y,
  take-up reel base ass'y,
  drive arm full ass'y.

3. Tape Speed Adjustment • Adjust at beginning of tape

Mode	Test tape	Adjustment location	Specifications rating (playback frequency)
PLAY	STD-301 (3 kHz)		3010 Hz ± 5 Hz

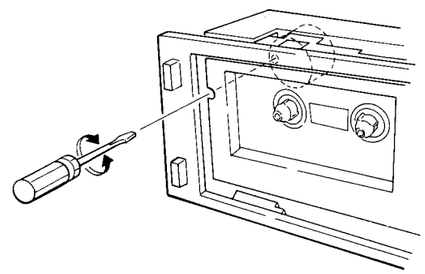
- With the pitch control VR (VR201) set to the physical center position, adjust VR501.



4. Tape Speed Adjustment • Adjust at beginning of tape

Mode	Test tape	Adjustment location	Specifications rating (playback frequency)
PLAY	STD-301 (3kHz)		3010Hz ± 5Hz

- The deck B tape speed must not deviate from the deck A tape speed by more than ± 5Hz.



11.2 ELECTRICAL ADJUSTMENTS

■ **Before commencing any electrical adjustments, make sure the following checked/completed.**

1. All mechanical adjustments must have been completed.
2. The heads must be clean and demagnetized.
3. Connect a 50kΩ (47kΩ ~ 52kΩ) dummy resistance to the OUTPUT terminal with 0dB =1V during level measurements.
4. Use the specified tapes for each adjustment. Although test tapes have both A and B sides, only use side A where the label is attached.
   STD-331B: Playback adjustment
   STD-608A: NORMAL blank tape
   STD-603: CrO_2 blank tape
   STD-610: METAL blank tape
5. Prepare the following measuring equipment. AC millivoltmeter, audio generator, attenuator, oscilloscope.
6. Adjust both left and right channels unless otherwise specified.
7. And unless indicated otherwise, leave the DOLBY NR switch in the OFF position.
8. Let the set warm up for at least a few minutes before commencing adjustments. And before commencing the record/playback frequency response adjustment, let the set "age" for three to five minutes.
9. Always adjust the set in the given adjustments order. If the order is changed, proper adjustment will not be possible, and this may result in loss of performance.

Adjustment Procedure

Deck A

1. Head azimuth adjustment
2. Playback equalizer adjustment
3. Playback level adjustment

Deck B

1. Head azimuth adjustment
2. Playback level adjustment
3. Recording/Playback frequency response
4. Recording level adjustment

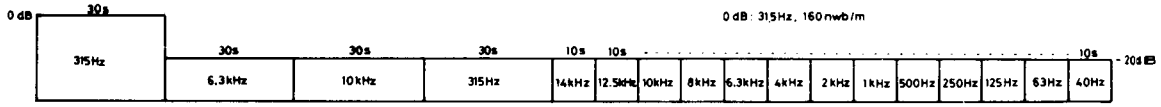


Fig. 11-1 Test tape STD-331B

• DECK A ADJUSTMENT (with auto tape selector function)

1. Head Azimuth Adjustment

• Set VR103 and VR104 (playback level adjustment) to MAX positions (turn fully clockwise)

Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
NORM	PLAY	Play 10kHz – 20dB portion of STD-331B test tape.	Head azimuth adjustment screw. (Fig. 11-3)	TP.L TP.R	Maximum playback signal level.	Apply "screw-lock" after completing adjustment.

2. Playback Equalizer Adjustment

• Set VR103 and VR104 (playback level adjustment) to the physical center positions.

Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
NORM	PLAY	Play the 315Hz –20dB and 6.3kHz –20dB portions of the STD-331B test tape.	VR101 (L) VR102 (R)	TP.L TP.R	The playback level at 6.3kHz must be within +0.5 ± 0.5dB of the level at 315Hz (see playback frequency response in Fig. 11-4.)	

3. Playback Level Adjustment

• Adjust precisely since this adjustment sets the playback Dolby level.

Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
NORM	PLAY	Play the 315Hz 0dB portion of the STD-331B test tape.	VR103 (L) VR104 (R)	TP.L TP.R	–7.7dBv (412mV)	

• DECK B ADJUSTMENT (with auto tape selector function)

1. Head Azimuth Adjustment

• Set VR105 and VR106 (playback level adjustment) to MAX positions (turn fully clockwise)

Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
NORM	PLAY	Play 10kHz –20dB portion of STD-331B test tape.	Head azimuth adjustment screw. (Fig. 11-3)	TP.L TP.R	Maximum playback signal level.	Apply "screw-lock" after completing adjustment.

2. Playback Level Adjustment

• Adjust precisely since this adjustment sets the playback Dolby level.

Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
NORM	PLAY	Play the 315Hz 0dB portion of the STD-331B test tape.	VR105 (L) VR106 (R)	TP.L TP.R	–7.7dBv (412mV)	

3. Recording/Playback Frequency Response Adjustment

Tape selector	Mode	Input signal/test tape		Adjustment location	Measuring location	Adjustment value	Remarks
NORM	REC	Apply a 315Hz signal to the recording terminals.	1	Input signal level to be applied to the recording terminals.	TP.L TP.R	–27.7dBv (41mV)	Set the recording level control to the physical center position (rear panel).
NORM	REC/PLAY	Record 315Hz and 6.3kHz signals on the STD-608A test tape, and then playback signals.	2	VR301 (L) VR302 (R)	TP.L TP.R	Repeat the recording and playback processes and adjust accordingly until the 6.3kHz playback level is within +0.5 ± 0.5dB of the 315Hz level.	

• Change the test tape and the DOLBY NR switch position and check that the frequency response zone indicated in Fig. 11-5 ~ 7 is satisfied. If the response curves are unsatisfactory, the 6.3kHz playback level can be readjusted to within $+0.5\ ^{+1.5}_{-2.0}$ dB of the 315Hz level..

4. Recording Level Adjustment

Tape selector	Mode	Input signal/test tape		Adjustment location	Measuring location	Adjustment value	Remarks
NORM	REC	Apply a 315Hz signal to the recording terminals.	1	Input signal level to be applied to the recording terminals.	TP.L TP.R	–7.7dBv (412mV)	Set the recording level control to the physical center position (rear panel).
NORM	REC/PLAY	Record the 315Hz signal onto the STD-608A test tape, and then play the signal back.	2	VR201 (L) VR202 (R)	TP.L TP.R	Repeat the recording the playback processes, and adjust accordingly until a playback level of –7.7dBv (412mV) is obtained.	
CrO_2	REC/PLAY	Record the 315Hz signal onto the STD-603 test tape, and then play the signal back.	3		TP.L TP.R	Check that the 315Hz playback level is –7.7dBv ± 1.5dB.	
METAL	REC/PLAY	Record the 315Hz signal onto the STD-610 test tape, and then play the signal back.	4		TP.L TP.R	Check that the 315Hz playback level is –7.7dBv ± 1.5dB.	

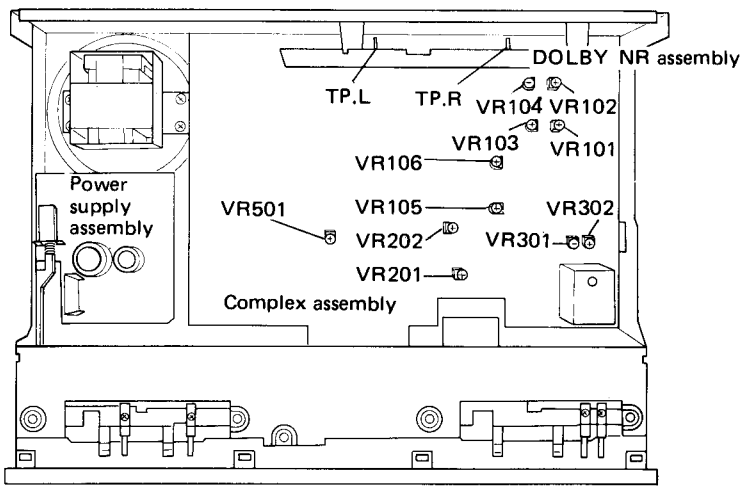


Fig. 11-2 Adjustment locations

- **Deck A**
  Playback equalizer adjustment
  VR101 (L)
  VR102 (R)
  Playback level adjustment
  VR103 (L)
  VR104 (R)
- **Deck B**
  Playback level adjustment
  VR105 (L)
  VR106 (R)
  Recording/playback frequency response adjustment
  VR301 (L)
  VR302 (R)
  Recording level adjustment
  VR201 (L)
  VR202 (R)

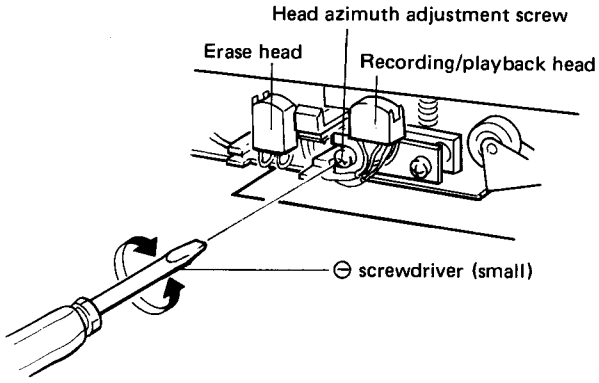


Fig. 11-3 Head azimuth adjustment

The CT-055W features an auto tape selector mechanism.

Test tape	STD-331B
Tape selector	NORM
DOLBY NR switch	OFF

- Due to "edge effect", compensate the right changed by −1dB at 63Hz.

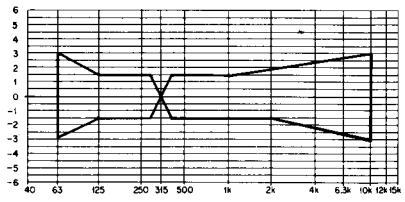


Fig. 11-4 Allowable playback frequency response zone

The CT-055W features an auto tape selector mechanism.

Test Tape: STD-608A
TAPE SELECTOR: NORM

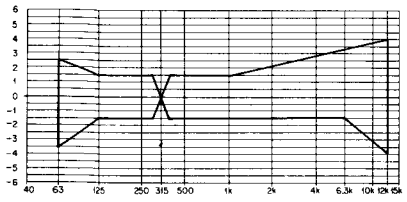
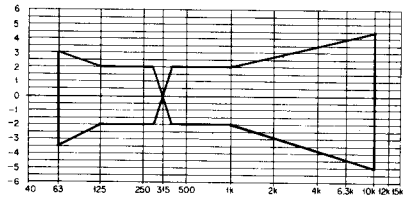
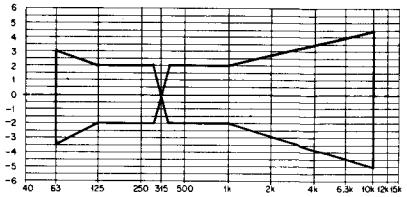
DOLBY NR: OFF	DOLBY NR: B-TYPE ON	DOLBY NR: C-TYPE ON
		

Fig. 11-5 Allowable recording and playback frequency response zone (NORM)

Test Tape: STD-603
TAPE SELECTOR: CrO_2

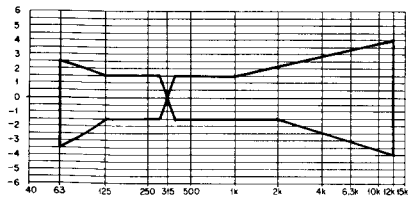
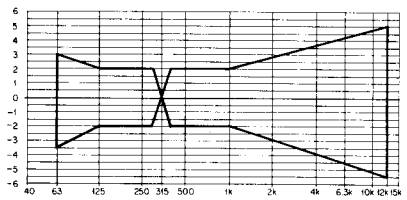
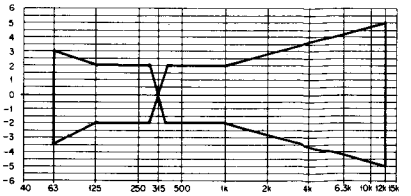
DOLBY NR: OFF	DOLBY NR: B-TYPE ON	DOLBY NR: C-TYPE ON
		

Fig. 11-6 Allowable recording and playback frequency response zone (CrO_2)

Test Tape: STD-610
TAPE SELECTOR: METAL

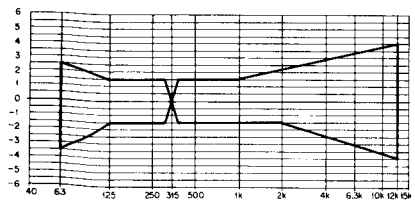
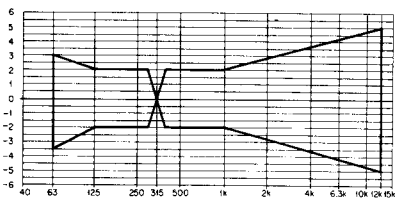
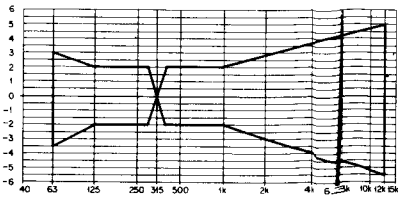
DOLBY NR: OFF	DOBLY NR: B-TYPE ON	DOLBY NR: C-TYPE ON
		

Fig. 11-7 Allowable recording and playback frequency response zone (METAL)

The CT-055W features an auto tape selector mechanism.

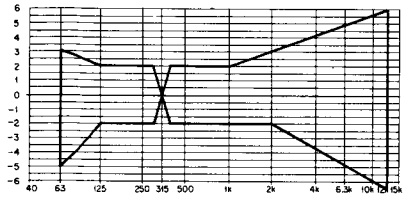
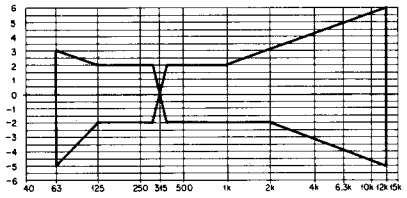
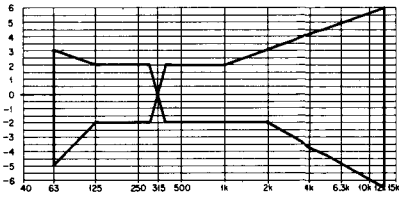
DOLBY NR: OFF		
Test Tape: STD-608A Tape selector: NORM	Test Tape: STD-603 Tape selector: CrO_2	Test Tape: STD-604 Tape selector: METAL
		

Fig. 11-8 Allowable copy frequency response zone

11. RÉGLAGES

11.1 RÉGLAGES MÉCANIQUES

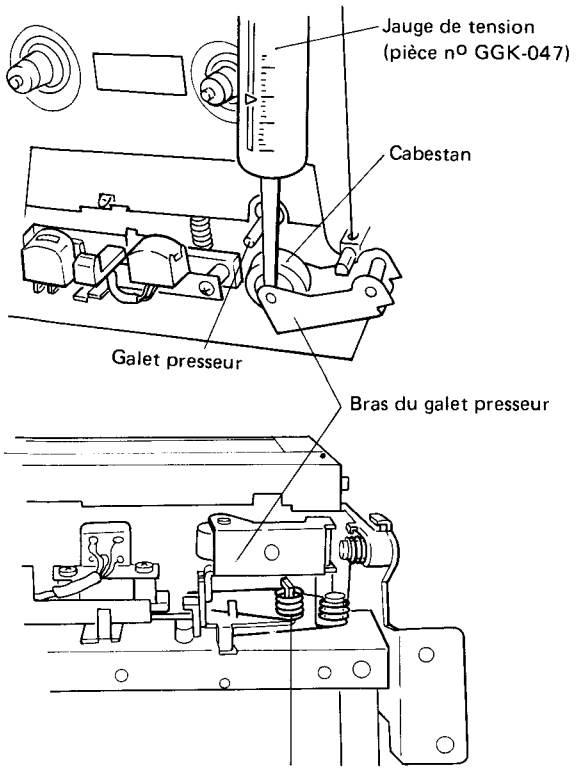
- Avant de procéder aux réglages mécaniques, nettoyer le cabestan, le galet presseur, la poulie et les courroies à l'aide d'un chiffon imbibé d'un peu d'alcool.
- Sauf spécification contraire, les réglages ci-dessous s'appliquent aux deux platines A et B.

1. Vérification du galet presseur

- Utiliser une jauge de tension (GGK-047)

Mode	Valeur nominale	Procédé
Reproduction (PLAY)	350g ± 100g	Approcher lentement le galet presseur vers le cabestan, et lire la valeur indiquée par la jauge de pression lorsque le galet presseur commence à tourner.

- Remplacement du ressort du galet presseur (AXV-066)



2. Vérification du couple à la base du pignon de la bobine.

- Utiliser un appareil de mesure de couple (GGK-056)

Mode	Couple à la base du pignon de bobine d'enroulement	Couple à la base du pignon de bobine débitrice
PLAY	35g·cm ~ 70g·cm	*1g·cm ~ 5g·cm
FF	70g·cm ~ 140g·cm	*1g·cm ~ 5g·cm
REW	*1g·cm ~ 5g·cm	70g·cm ~ 140g·cm

* Couple de contre-tension.

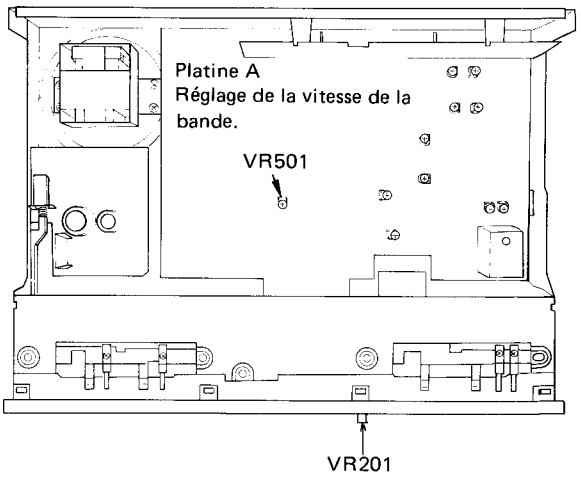
- Si les couples ne sont pas conformes aux valeurs nominales, remplacer
  l'ensemble base pignon de bobine débitrice
  l'ensemble base pignon de bobine d'enroulement
  l'ensemble arbre d'entraînement

3. Réglage de la vitesse de la bande.

- Procéder au réglage au début de la bande.

Mode	Bade d'essai	Emplacement du réglage	Valeurs nominales (fréquence de reproduction)
Reproduction (PLAY)	STD-301 (3kHz)		3010Hz ± 5Hz

- Placer le contrôle de ton VR (VR201) sur la position centrale et ajuster le VR501.

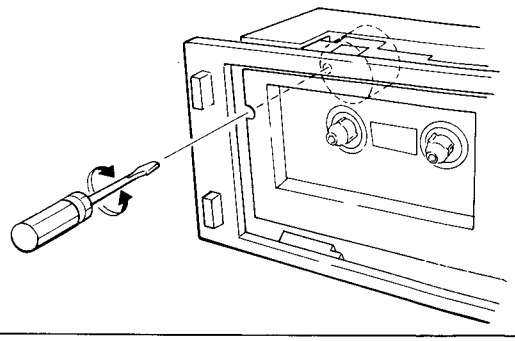


4. Réglage de la vitesse de la bande.

- Procéder au réglage au début de la bande.

Mode	Bade d'essai	Emplacement du réglage	Valeurs nominales (fréquence de reproduction)
Reproduction (PLAY)	STD-301 (3kHz)		3010Hz ± 5Hz

- La vitesse de la platine B ne doit pas s'écarter de la vitesse de la platine A de plus de ± 5Hz.



11.2 RÉGLAGES ÉLECTRIQUES

■ **Avant de commencer à procéder aux réglages électriques, bien effectuer les vérifications suivantes.**

1. Tous les réglages mécaniques ont été effectués.
2. Les têtes doivent être propres et démagnétisées.
3. Brancher une résistance fictive de 50 kohms (47 ~ 52 kohms) sur la borne de sortie (OUTPUT) en se basant sur 0dB = 1V pendant les mesures de niveau.
4. Utiliser les bandes spécifiées pour chaque réglage. Bien que les bandes d'essai aient à la fois une face A et une face B, n'utiliser que la face A sur laquelle est attachée l'étiquette.
   STD-331B: Réglage de la reproduction.
   STD-608A: Bande vierge ordinaire. (NORMAL)
   STD-603: Bande vierge à l'oxyde de chrome (CrO_2)
   STD-610: Bande vierge au métal (METAL)
5. Préparer les équipements de mesure ci-après: millivoltmètre CA, générateur audio, atténuateur, oscilloscope.
6. Régler à la fois le canal gauche et le canal droit, sauf spécification contraire.
7. Sauf spécification contraire, laisser le commutateur de réduction de bruit DOLBY en position arrêt (OFF).
8. Laisser l'appareil chauffer pendant au moins quelques minutes avant de commencer les réglages. Avant de commencer le réglage de la réponse en fréquences enregistrement/reproduction, laisser l'appareil fonctionner de trois à cinq minutes.
9. Toujours procéder aux réglages dans l'ordre indiqué. Si cet ordre est modifié, il ne sera plus possible d'effectuer des réglages correctement, et cela pourrait entraîner une dégradation des performances.

Procédure de réglage

Platine A

1. Réglage de l'azimutage de la tête.
2. Réglage de l'égalisateur de reproduction.
3. Réglage du niveau de reproduction.

Platine B

1. Réglage de l'azimutage de la tête.
2. Réglage du niveau de reproduction.
3. Réponse en fréquences enregistrement/reproduction.
4. Réglage du niveau d'enregistrement.

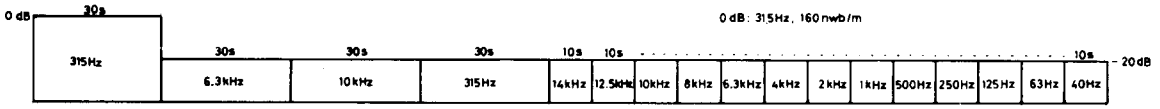


Fig. 11-1 Band d'essai STD-331B

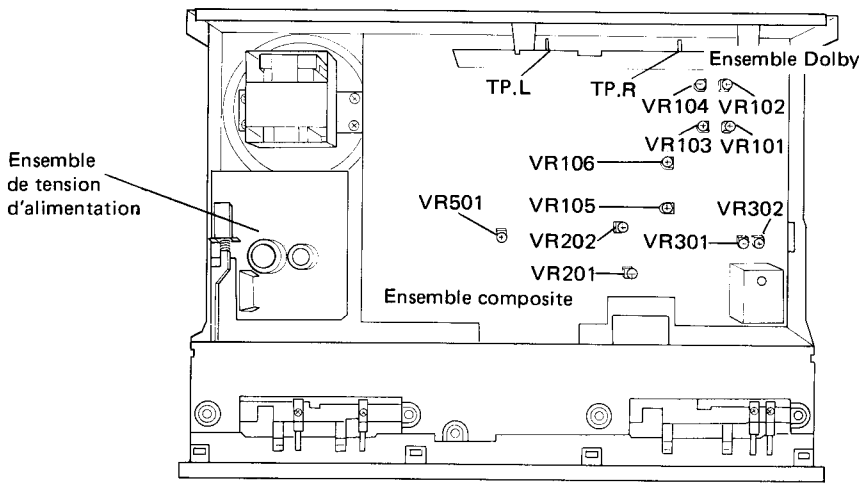


Fig. 11-2 Emplacements des réglages

- **Platine A**
  Réglage de l'égalisateur de reproduction
  VR101 gauche (L)
  VR102 droit (R)
  Réglage du niveau de reproduction
  VR103 gauche (L)
  VR104 droit (R)
- **Platine B**
  Réglage du niveau de reproduction
  VR105 gauche (L)
  VR106 droit (R)
  Réglage de la réponse en fréquences d'enregistrement-reproduction
  VR301 gauche (L)
  VR302 droit (R)
  Réglage du niveau d'enregistrement
  VR201 gauche (L)
  VR202 droit (R)

• RÉGLAGE DE LA PLATINE A • (Avec sélecteur automatique de bande)

1. Réglage de l'azimutage de la tête • Placer le VR103 et le VR104 (Réglage du niveau de reproduction) sur la position maximale MAX (tourner complètement dans le sens des aiguilles d'une montre).

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai	Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Reproduction (PLAY)	Reproduire la portion 10kHz −20dB de la bande d'essai STD-331B.	Vis de réglage de l'azimutage de la tête. (Fig. 11-3)	TP.L TP.R	Niveau de signal de reproduction maximal.	Mettre en place "l'arrêt de vis" après avoir terminé ce réglage.

2. Réglage de l'égalisateur de reproduction • Placer le VR103 et le VR104 (Réglage du niveau de reproduction) sur la position centrale.

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai	Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Reproduction	Reproduire les portions 315Hz −20dB et 6,3kHz −20dB de la bande d'essai.	VR101 gauche (L) VR102 droit (R)	TP.L TP.R	La niveau de reproduction à 6,3kHz doit être compris entre+0,5 ± 0,5dB du niveau à 315Hz (Voir la réponse en fréquences de reproduction sur la Fig. 11-4).	

3. Réglage du niveau de reproduction • Procéder à cet réglage avec précision car celui-ci détermine le niveau de reproduction du DOLBY.

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai	Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Reproduction (PLAY)	Reproduire la portion 315Hz 0dB de la bande d'essai STD-331B.	VR103 gauche (L) VR104 droit (R)	TP.L TP.R	−7,7dB (412mV)	

• RÉGLAGE DE LA PLATINE B (Avec sélecteur automatique de bande)

1. Réglage de l'azimutage de la tête • Placer le VR105 et le VR106 (Réglage de niveau de reproduction) sur la position maximale (tourner complètement dans le sens des aiguilles d'une montre).

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai	Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Reproduction (PLAY)	Reproduire la portion 10kHz −20dB de la bande d'essai STD-331B.	Vis de réglage de l'azimutage de la tête. (Fig. 11-3)	TP.L TP.R	Niveau de signal de reproduction maximal.	Mettre en place "l'arrêt de vis" après avoir effectué ce réglage.

2. Réglage du niveau de reproduction • Procéder à ce réglage avec précision car celui-ci détermine le niveau de reproduction du DOLBY.

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai	Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Reproduction (PLAY)	Reproduire la portion 315Hz 0dB de la bande d'essai STD-331B.	VR105 gauche (L) VR106 droit (R)	TP.L TP.R	−7,7dBv (412mV)	

3. Réglage de la réponse en fréquences d'enregistrement et de reproduction

Sélecteur de bande	Mode	Signal d'entrée/bande d'essai		Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Enregistrement (REC)	Appliquer un signal de 315Hz sur les bornes d'enregistrement.	1	Le niveau du signal d'entrée à appliquer sur les bornes d'entrée.	TP.L TP.R	−27,7dBv (41mV)	Placer le contrôle de niveau d'enregistrement sur la position centrale.
Normal (NORM)	Enregistrement/reproduction (REC/PLAY)	Enregistrer des signaux de 315Hz et 6,3kHz sur la bande d'essai STD-608A, et reproduire ensuite les signaux.	2	VR301 gauche (L) VR302 droit (R)	TP.L TP.R	Recommencer les procédures d'enregistrement et de reproduction, et procéder au réglage en conséquence jusqu'à ce que le niveau de reproduction du 6,3kHz soit compris entre +0,5 ± 0,5dB du niveau du 315Hz.	

• Changer la bande d'essai et la position du commutateur de réducteur de bruit DOLBY, et vérifier que la courbe de réponse en fréquences indiquée sur la Fig. 11-5 ~ 7 est respectée. Si les courbes de réponse ne sont pas satisfaisantes, il est possible de régler à nouveau le niveau de reproduction du 6,3 kHz entre +0,5 $^{+1,5}_{-2,0}$ dB du niveau du 315Hz.

4. Réglage du niveau d'enregistrement							
Sélecteur de bande	Mode	Signal d'entrée/bande d'essai		Emplacement du réglage	Emplacement de mesure	Valeur de réglage	Remarques
Normal (NORM)	Enregistrement (REC)	Appliquer un signal de 315Hz sur les bornes d'enregistrement.	1	Le niveau du signal d'entrée à appliquer sur les bornes d'entrée.	TP.L TP.R	−7,7dBv (412mV)	Placer le contrôle de niveau d'enregistrement sur la position centrale.
Normal (NORM)	Enregistrement/reproduction (REC/PLAY)	Enregistrer le signal de 315Hz sur la bande d'essai STD-608A, puis reproduire le signal.	2	VR201 gauche (L) VR202 droit (R)	TP.L TP.R	Recommencer les procédures d'enregistrement et de reproduction, et procéder au réglage jusqu'à ce que un niveau de reproduction de −7,7dBv (412mV) soit obtenu.	
Oxyde de chrome (CrO_2)	Enregistrement/reproduction (REC/PLAY)	Enregistrer le signal de 315Hz sur la bande d'essai STD-603, puis reproduire le signal.	3		TP.L TP.R	Vérifier que le niveau de reproduction du 315Hz est à −7,7dBv ± 1,5dB.	
Métal (METAL)	Enregistrrement/reproduction (REC/PLAY)	Enregistrer le signal de 315Hz sur la bande d'essai STD-610, puis reproduire le signal.	4		TP.L TP.R	Vérifier que le niveau de reproduction du 315Hz est à −7,7dBv ± 1,5dB.	

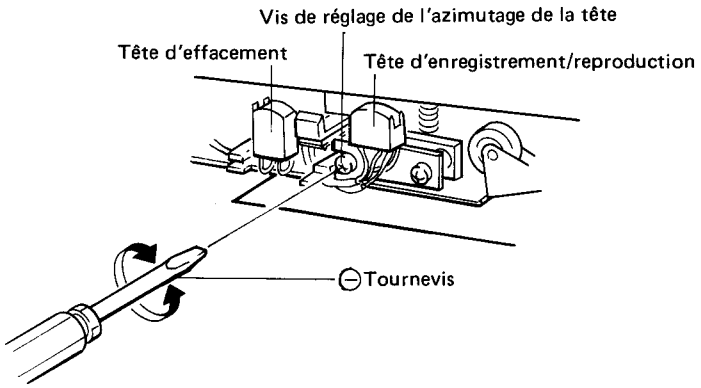


Fig. 11-3 Réglage de l'azimutage de la tête

Le CT-055W offre un mécanisme de sélection automatique de bande.

Bande d'étalonnage	STD-331B
Sélecteur de bande	NORM
Commutateur DOLBY NR	OFF

- Suite à l'effet de bordure, le canal droit doit être compensé de −1dB à 63Hz.

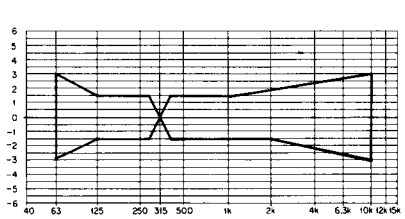


Fig. 11-4 Réponse en fréquence admissible en lecture

Le CT-055W offre un mécanisme de sélection automatique de bande

Barde d'étalonnage: STD-608A
Tape selector: NORM

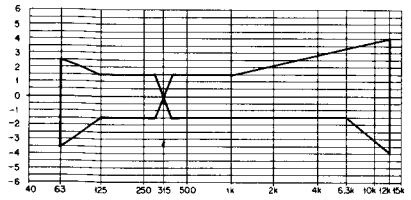
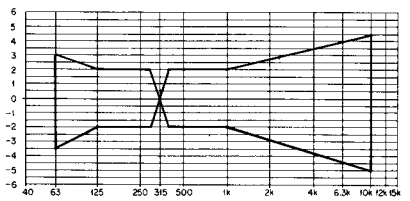
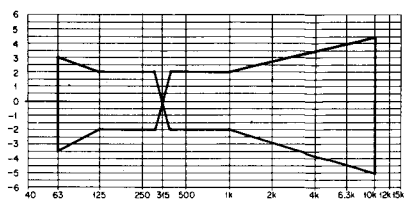
DOLBY NR: OFF (arrêt)	DOLBY NR: TYPE B ON (marche)	DOLBY NR: TYPE C ON (marche)
		

Fig. 11-5 Zone de réponse en fréquence admissible de lecture et d'enregistrement (NORM)

Barde d'étalonnage: STD-603
Tape selector: CrO_2

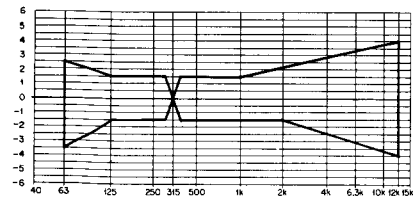
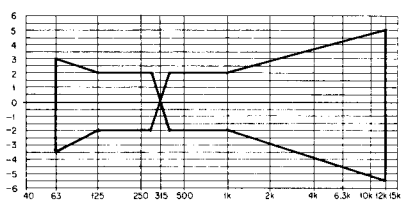
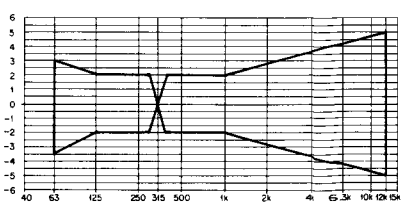
DOLBY NR: OFF (arrêt)	DOLBY NR: TYPE B ON (marche)	DOLBY NR: TYPE C ON (marche)
		

Fig. 11-6 Zone de réponse en fréquence admissible de lecture et d'enregistrement (CrO_2)

Barde d'étalonnage: STD-610
Tape selector: METAL

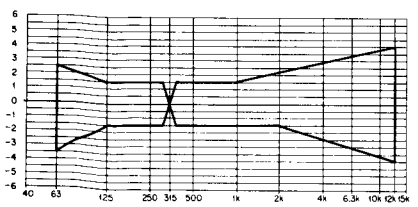
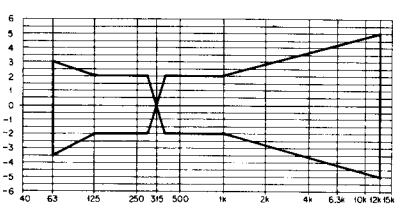
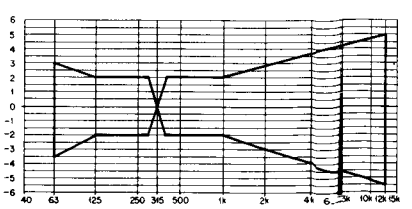
DOLBY NR: OFF (arrêt)	DOLBY NR: TYPE B ON (marche)	DOLBY NR: TYPE C ON (marche)
		

Fig. 11-7 Zone de réponse en fréquence admissible de lecture et d'enregistrement (METAL)

Le CT-055W offre un mécanisme de sélection automatique de bande

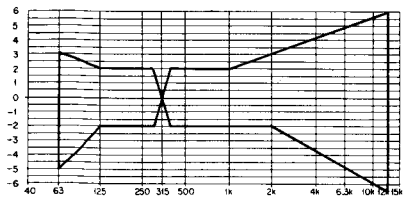
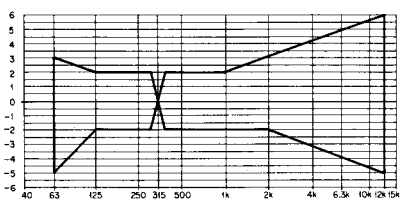
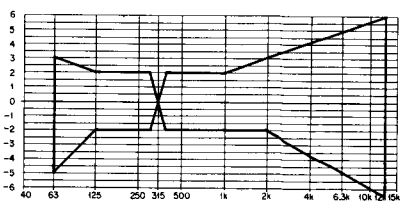
Commutateur Dolby NR: OFF (arrêt)		
Bande d'essai: STD-608A Sélecteur de bande: NORM	Bande d'essai: STD-603 Sélecteur de bande: CrO_2	Bande d'essai: STD-604 Sélecteur de bande: METAL
		

Fig. 11-8 Réponse en fréquence admissible en copie

11. AJUSTE

11.1 AJUSTES MECANICOS

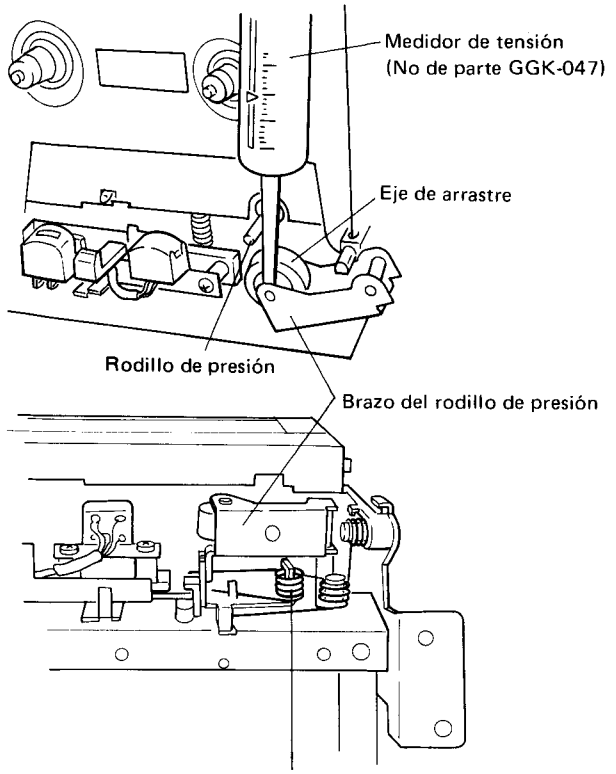
- Antes de iniciar cualquier ajuste mecánico, limpiar el eje de arrastre, rodillo de presión, polea loca, y correas con un paño humedecido en un poco de alcohol.
- A menos que se indique especialmente, los ajustes siguientes se refieren a los magnetófonos A y B.

1. Comprobación de la presión del rodillo de presión

- Emplear el medidor de tensión (GGK-047)

Modo	Valores de especificaciones	Condiciones
PLAY	350g ± 100g	Dejar que el rodillo de presión se acerque lentamente al eje de arrastre y leer el valor del medidor de tensión cuando el rodillo de presión empieza a girar.

- Cambiar el muelle de presión del rodillo de presión (AXV-066)


Medidor de tensión
(No de parte GGK-047)
Eje de arrastre
Rodillo de presión
Brazo del rodillo de presión
Muelle de presión del rodillo de presión
(No de parte AXV-066)

2. Comprobación del par de torsión de la base del carrete

- Emplear el medidor de par de torsión (GGK-056)

Modo	Valores de torsión de la base del carrete de arrastre	Valores de torsión de la base del carrete de suministro
PLAY	35g·cm ~ 70g·cm	*1g·cm ~ 5g·cm
FF	70g·cm ~ 140g·cm	*1g·cm ~ 5g·cm
REW	*1g·cm ~ 5g·cm	70g·cm ~ 140g·cm

* Par de torsión de retrotensión.

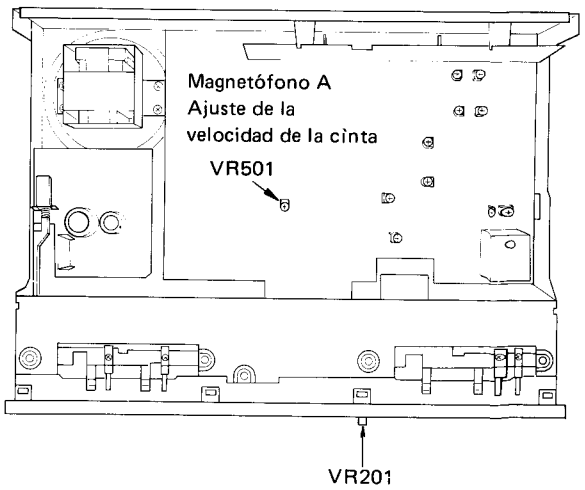
- Si no se satisfacen los valores de los pares de torsión, cambiar el conjunto de la base del carrete de suministro conjunto de la base del carrete de arrastre y conjunto completo del brazo impulsor.

3. Ajuste de la velocidad de la cinta

- Ajustar al principio de la cinta

Mode	Cinta de prueba	Lugar de ajuste	Valores de especificaciones (Frecuencia de reproducción)
PLAY	STD-301 (3kHz)		3010Hz ± 5Hz

- Ajustar el ajuste de tono VR (VR201) a la posicione centrale fisica y ajustar el VR501.

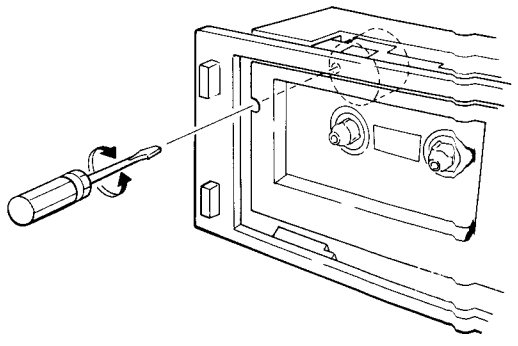


4. Ajuste de la velocidad de la cinta

- Ajustar al principio de la cinta

Mode	Cinta de prueba	Lugar de ajuste	Valores de especificaciones (Frecuencia de reproducción)
PLAY	STD-301 (3kHz)		3010 Hz ± 5Hz

- La velocidad de la cinta del magnetófono B no debe desviarse de la velocidad de la cinta del magnetófono A en más de ±5Hz.



11.2 AJUSTES ELECTRICOS

■ Antes de iniciar cualquier ajuste, cerciorarse de haber completado y comprobado lo siguiente.

1. Deben haberse completo todos los ajustes mecánicos.
2. Las cabezas deben estar limpias y desmagnetizadas.
3. Conectar una resistencia ficticia de 50K ohmios (47 ~ 52K ohmios) al terminal OUTPUT con 0dB = 1V durante las mediciones del nivel.
4. Emplear las cintas especificadas para cada ajuste. Aunque estas cintas están provistas de ambos lados, A y B, emplear sólo el lado A, donde está la etiqueta.
   STD-331B: Ajuste de reproducción.
   STD-608A: Cinta en blanco NORMAL.
   STD-603: Cinta en blanco de CrO_2.
   STD-610: Cinta en blanco de METAL.
5. Preparar el siguiente equipo de medición: Un voltímetro de CA, un generador de sonido, un atenuador y un osciloscopio.
6. Ajustar los canales izquierdo y derecho a menos que se especifique lo contrario.
7. Y a menos que se diga lo contrario, dejar el interruptor DOLBY NR en la posición OFF.
8. Dejar que se precaliente el aparato durante algunos minutos antes de iniciar los ajustes. Y antes de empezar el ajuste de la respuesta en frecuencia para reproducción y grabación, dejar que se precaliente de tres a cinco minutos.
9. Ajustar siempre el aparato en el orden de ajuste dado. Si se cambia el orden, no son posibles los ajustes adecuados, lo cual puede ocasionar pérdida del rendimiento.

Procedimientos de ajuste

Magnetófono A

1. Ajuste del acimut de la cabeza.
2. Ajuste del ecualizador de reproducción.
3. Ajuste del nivel de reproducción.

Magnetófono B

1. Ajuste del acimut de la cabeza.
2. Ajuste del nivel de repoducción.
3. Respuesta en frecuencia de grabación/reproducción.
4. Ajuste del nivel de grabación.

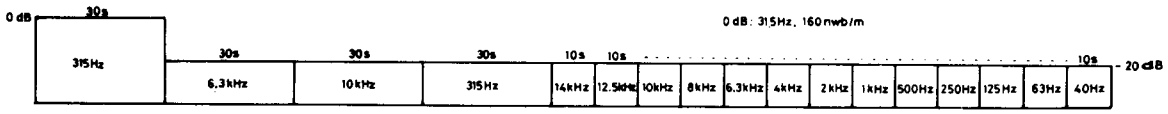
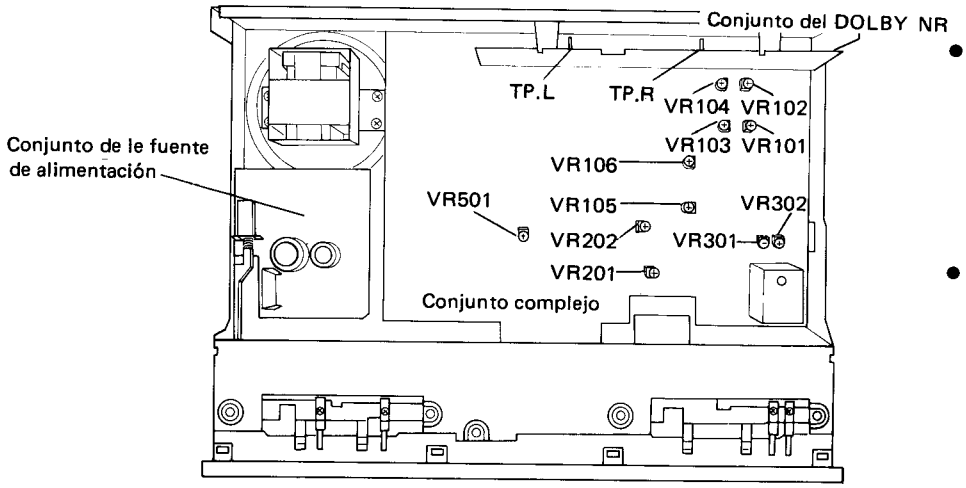


Fig. 11-1 Cinta de prueba STD-331B



- **Magnetófono A**
  Ajuste del ecualizador de reproducción
  VR101 (izq.) (L)
  VR102 (der.) (R)
  Ajuste del nivel de reproducción
  VR103 (izq.) (L)
  VR104 (der.) (R)
- **Magnetófono B**
  Ajuste del nivel de reproducción
  VR105 (izq.) (L)
  VR106 (der.) (R)
  Ajuste de la respuesta en frecuencia de grabación/reproducción
  VR301 (izq.) (L)
  VR302 (der.) (R)
  Ajuste del nivel de grabación
  VR201 (izq.) (L)
  VR202 (der.) (R)

Fig. 11-2 Lugares de ajuste

• AJUSTE DEL MAGNETOFONO A (Sin la función del selector automático de cintas)

1. Ajuste del acimut de la cabeza • Ajustar VR103 y VR104 (Ajuste del nivel de reproducción) a las posiciones MAX (Girados completamente a la derecha)

Selector de cintas	Modo	Señal de entrada/cinta de prueba	Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	PLAY	Reproducir la parte de 10kHz −20dB de la cinta de prueba STD-331B.	Tornillo de ajuste del acimut de la cabeza. (Fig. 11-3)	TP.L TP.R	Nivel máximo de señal de reproducción.	Aplicar el "enclavamiento del tornillo" después de finalizar el ajuste.

2. Ajuste del ecualizador de reproducción • Ajustar VR103 y VR104 (Ajuste del nivel de reproducción) a las posiciones centrales físicas.

Selector de cintas	Modo	Señal de entrada/cinta de prueba	Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	PLAY	Reproducir las partes de 315Hz −20dB y de 6,3kHz −20dB de la cinta de prueba STD-331B.	VR101 (L) VR102 (R)	TP.L TP.R	El nivel de reproducción a 6,3kHz debe estar dentro de +0,5 ± 0,5dB del nivel a 315Hz (Ver la respuesta en frecuencia de reproducción de la Fig. 11-4).	

3. Ajuste del nivel de reproducción • Ajustar con precisión porque este ajuste establece el nivel del sistema Dolby para reproducción.

Selector de cintas	Modo	Señal de entrada/cinta de prueba	Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	PLAY	Reproducir la parte de 315HZ 0dB de la cinta de prueba 331B.	VR103 (L) VR104 (R)	TP.L TP.R	−7,7dBv (412mV)	

• AJUSTE DEL MAGNETOFONO B (Con la función del selector automático de cintas)

1. Ajuste del acimut de la cabeza • Ajustar VR105 y VR106 (Ajuste del nivel de reproducción) a las posiciones MAX (Girados completamente a la derecha)

Selector de cintas	Modo	Señal de entrada/cinta de prueba	Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	PLAY	Reproducir la parte de 10kHz −20dB de la cinta de prueba STD-331B.	Tornillo de ajuste del acimut de la cabeza. (Fig. 11-3)	TP.L TP.R	Nivel máximo de la señal de reproducción.	Aplicar el "enclavamiento del tornillo" después de terminar el ajuste.

2. Ajuste del nivel de reproducción • Ajustar con precisión porque este ajuste establece el nivel del sistema Dolby de reproducción.

Selector de cintas	Modo	Señal de entrada/cinta de prueba	Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	PLAY	Reproducir la parte de 315Hz 0dBv de la cinta de prueba STD-331B.	VR105 (L) VR106 (R)	TP.L TP.R	−7,7dBv (412mV)	

3. Ajuste de la respuesta en frecuencia para grabación/reproducción

Selector de cintas	Modo	Señal de entrada/cinta de prueba		Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	REC	Apicar una señal de 315Hz a los terminales de grabación.	1	El nivel de señal de entrada a apicar a los terminales de grabación.	TP.L TP.R	−27,7dBv (41mV)	Ajustar el nivel de reproducción a las posiciones centrales fisicas.
NORM	REC/PLAY	Grabar las señales de 315Hz y de 6,3kHz en la cinta de prueba STD-608A, y luego reproducirlas.	2	VR301 (L) VR302 (R)	TP.L TP.R	Repetir los procesos de grabación y reproducción y ajustar consecuentemente hasta que el nivel de reproducción de 6,3kHz esté dentro de +0,5± 0,5dB del nivel de 315Hz.	

• Cambiar la cinta de prueba y la posición del interruptor DOLBY NR y comprobar que la zona de respuesta en frecuencia indicada en la Fig. 11.5~7 se satisfaga. Si las curvas de la respuesta son insatisfactorias, el nivel de reproducción de 6,3kHz podrá reajustarse a dentro de +0,5 $^{+1,5}_{-2,0}$ dB del nivel de 315Hz.

4. Ajuste del nivel de grabación							
Selector de cintas	Modo	Señal de entrada/cinta de prueba		Lugar de ajuste	Lugar de medición	Valor de ajuste	Observaciones
NORM	REC	Apicar una señal de 315Hz a los terminales de grabación.	1	El nivel de señal de entrada a apicar a los terminales de grabación.	TP1 (L) TP2 (R)	−7,7dBv (412mV)	Ajustar el nivel de reproducción a las posiciones centrales fisicas.
NORM	REC/PLAY	Grabar la señal de 315Hz en la cinta de prueba STD-608A y reproducirlas.	2	VR201 (L) VR202 (R)	TP1 (L) TP2 (R)	Repetir los procesos de grabación y ajustar consecuentemente hasta que se obtenga un nivel de reproducción de −7,7dBV (412mV).	
CrO_2	REC/PLAY	Grabar la señal de 315Hz en la cinta de prueba STD-603, y reproducirla.	3		TP1 (L) TP2 (R)	Comprobar que el nivel de reproducción de 315Hz sea de −7,7dBV ± 1,5dB.	
METAL	REC/PLAY	Grabar la señal de 315Hz en la cinta de prueba STD-610 y reproducirla.	4		TP1 (L) TP2 (R)	Comprobar que el nivel de reproducción de 315Hz sea de −7,7dBv ± 1,5dB.	

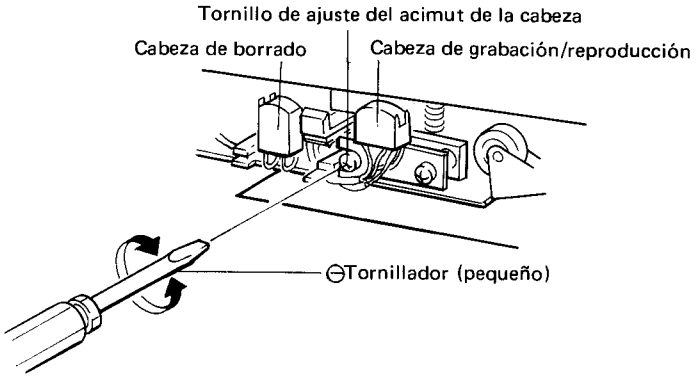


Fig. 11-3 Ajuste del acimut de la cabeza

El CT-055W está provisto de un mecanismo selector automático de cintas.

Cinta de prueba	STD-331B
Selector de cinta	NORM
Interruptor DOLBY NR	OFF

- La señal de canal derecho se compensa en −1dB desde los valores reales de 40Hz y 63Hz.

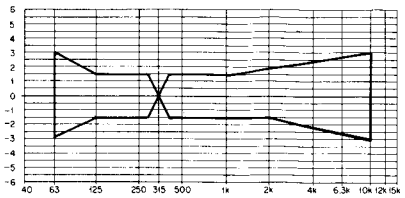


Fig. 11-4 Zona de respuesta de frecuencia de reproducción permisible

El CT-055W está provisto de un mecanismo selector automático de cintas

Cinta de prueba: STD-608A
Selector de cinta: NORM

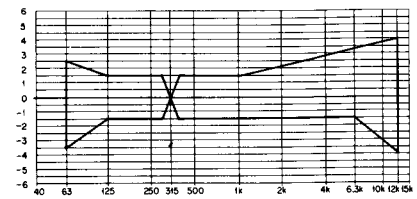
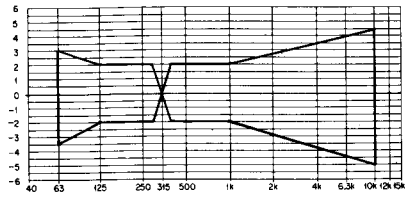
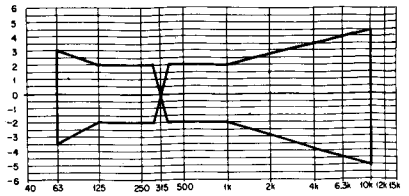
DOLBY NR: OFF	DOLBY NR: TIPO B ON	DOLBY NR: TIPO C ON
		

Fig. 11-5 Zona de respuesta de frecuencia de grabación y reproducción permisible (NORM)

Cinta de prueba: STD-603
Selector de cinta: CrO_2

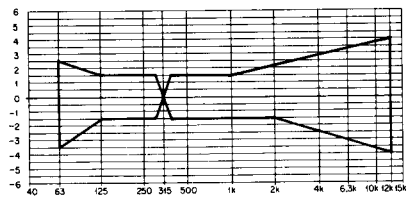
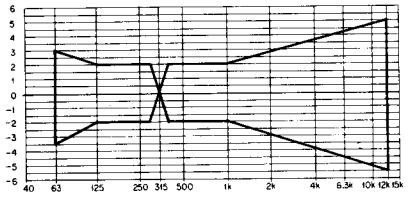
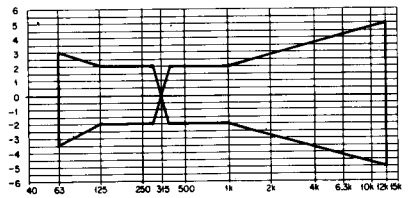
DOLBY NR: OFF	DOLBY NR: TIPO B ON	DOLBY NR: TIPO C ON
		

Fig. 11-6 Zona de respuesta de frecuencia de grabación y reproducción permisible (CrO_2)

Cinta de prueba: STD-610
Selector de cinta: METAL

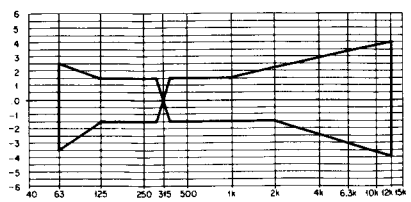
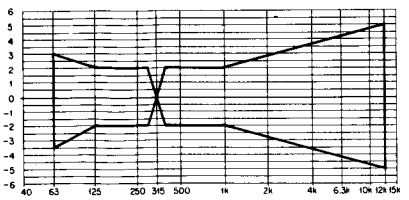
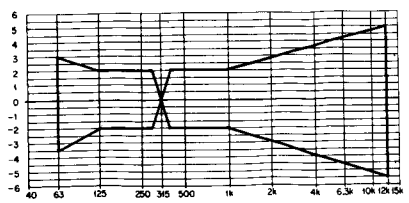
DOLBY NR: OFF	DOLBY NR: TIPO B ON	DOLBY NR: TIPO C ON
		

Fig. 11-7 Zona de respuesta de frecuencia de grabación y reproducción permisible (METAL)

El CT-055W está provisto de un mecanismo selector automático de cinta

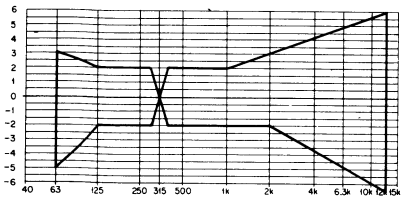
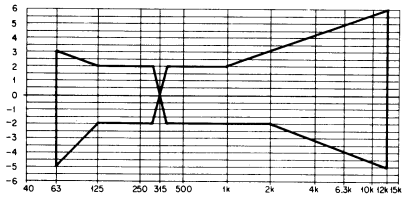
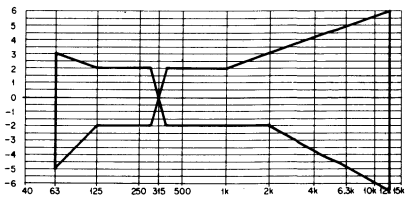
Interruptor Dolby NR: OFF		
Cinta de prueba: STD-608A Selector de cinta: NORM	Cinta de prueba: STD-603 Selector de cinta: CrO_2	Cinta de prueba: STD-604 Selector de cinta: METAL
		

Fig. 11-8 Zona de respuesta de frecuencia de copiado permisible

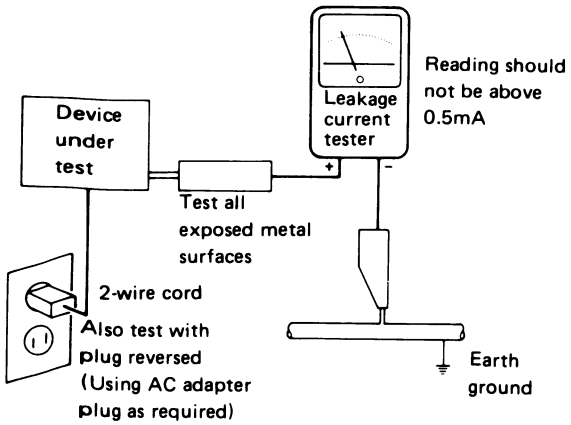
12. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

13. SUPPLEMENT FOR HEM AND HB TYPES

Model CT-055W/HEM and HB types are the same as the CT-055W/KU with the exception of this supplement.

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
  560Ω 56 x 10¹ 561 . . . . . RD¼PS 5 6 1 J
  47kΩ 47 x 10³ 473 . . . . . RD¼PS 4 7 3 J
  0.5Ω 0R5 . . . . . RN2H 0 R 5 K
  1Ω 010 . . . . . RS1P 0 1 0 K
  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
  5.62kΩ 562 x 10¹ 5621. . . . . RN¼SR 5 6 2 1 F
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Contrast of Miscellaneous Parts

Mark	Symol & Description	Part No.			Remarks
		KU type	HEM type	HB type	
	Power supply assembly	GWR-206	GWR-208	GWR-208	
⚠ ★	T1 Power transformer (120V)	ATS-122	. . . . .	. . . . .	
⚠ ★	(220V/240V)	. . . . .	ATS-124	ATS-124	
⚠ ★★	FU1 Fuse (2A)	AEK-122	. . . . .	. . . . .	
⚠ ★★	FU1 Fuse (T2A)	. . . . .	AEK-017	AEK-017	
⚠	Strain relief	AEC-327	AEC-882	AEC-882	
⚠	Power cord	ADG-052	ADG-041	ADG-079	
	Packing case	AHE-348	AHE-394	AHE-394	
	Operating instruction (English)	ARB-610	. . . . .	ARB-610	
	(English/German/French/Italian)	. . . . .	ARE-109	. . . . .	

Power Supply Assembly Parts List for HEM and HB types.

Power Assembly (GWR-208)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q101	2SD836A
⚠ ★	D101	RB152
★	D102, D103, D104	S5566
★	D105	KZL130
★	D106	KZL061
★	D107 – D112	US1035
★	D113	RD7.5EB

SWITCH

Mark	Symbol & Description	Part No.
⚠ ★★	S101 Push switch (POWER)	ASG541

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C101	ACG502
⚠	C102	ACG019
	C103	CEA472M 25
	C104	CEA221M 25L
	C105, C110	CCDSL 101J 50

Mark	Symbol & Description	Part No.
	C106, C107	CEA 221M 16L
	C108	CKDYF 103Z 50
	C109	CEA 222M 25L
	C111	CEA 101M 10L
	C112	CEA 2R2M 50L
	C113, C114	CQMA 104J 50

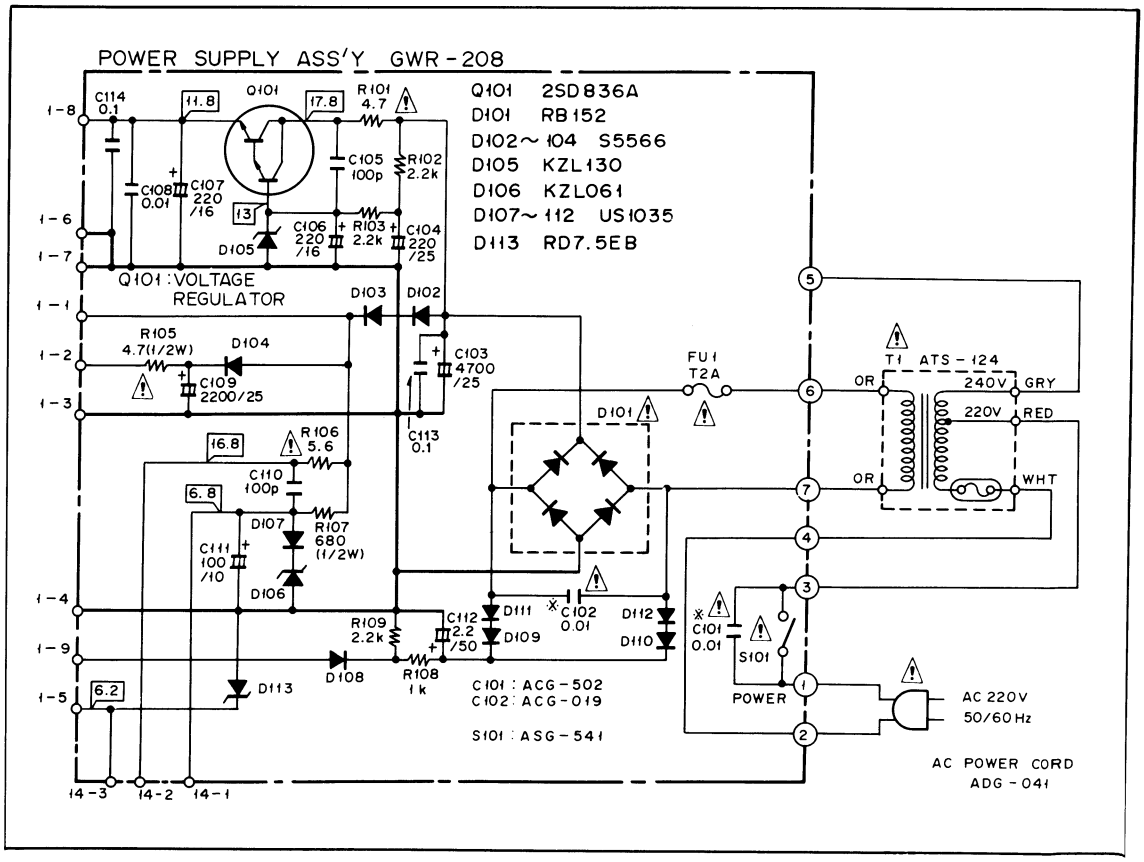
RESISTORS

Mark	Symbol & Description	Part No.
⚠	R101	RFA1/4PS4R7J
	R102, R103	RD1/4PM222J
⚠	R105	RD1/2PMFL4R7J
⚠	R106	RFA1/4PL5R6J
	R107	RD1/2PM681J
	R108	RD1/8PM102J
	R109	RD1/8PM222J

OTHERS

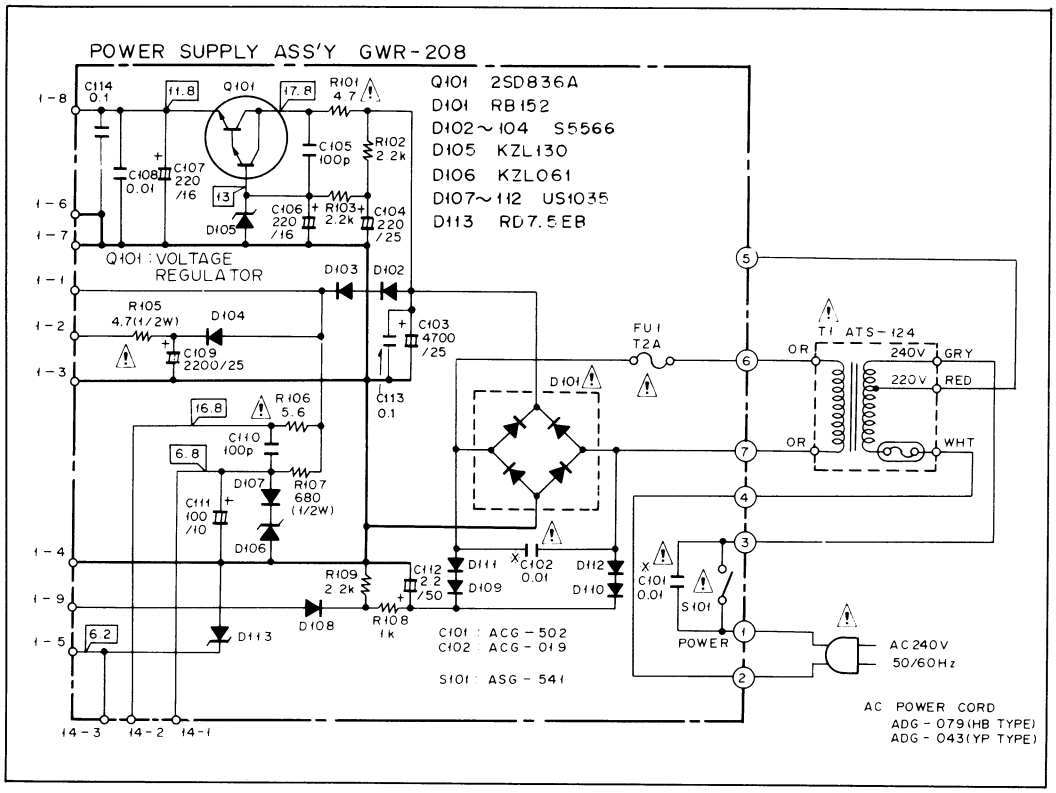
Mark	Symbol & Description	Part No.
	Screw	PBZ30P060FMC

Power Supply Assembly Circuit for HEM type.



NOTE:
For power requirement switching, wiring must be switched between the leads "GRY" and "RED" on the primary side of the power transformer.

Power Supply Circuit for HB Type.



NOTE:
For power requirement switching, wiring must be switched between the leads "GRY" and "RED" on the prinary side of the power transformer.

P.C. Board of Power Supply Circuit (GWR-208)